

The United States MILLER

Volume 7.—No. 5.

MILWAUKEE, SEPTEMBER, 1879.

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British and Irish Flour Mills.

DEPTFORD BRIDGE MILLS, LONDON.

The owners of this establishment, the Messrs. J. & H. Robinson, have been long known in the trade in connection with the Lewisham Mills, and the success they achieved there naturally resulted in the further development of their business, which had taken place in the vicinity of Deptford Bridge.

Messrs. Robinson have been connected with milling and farming for many generations, the family having owned and occupied a farm in the lower part of Surrey uninterruptedly since 1637, where the present members of the firm were born, and which they continue still to own and occupy. At the time the Lewisham Mills were started one of the members of the firm, Mr. Henry Robinson, now President of the London Millers' Association, and Treasurer of the National Association of British and Irish Millers, was in the United States, but soon after he joined his brother in the management of the Lewisham business, bringing to the work the experience he acquired in America, and a large share of that sympathy with progress which a period of sojourn in that country usually inspires, more especially in those naturally endowed with progressive proclivities. At the time the site of the Deptford Bridge Mills was acquired by the firm one side of it was occupied by an old malt-house, and the other by an old floor-cloth manufactory. The site is convenient for milling purposes, being connected with the Thames by a tidal dock, navigable for barges for the reception of wheat. The west side of the building is washed by the small river Ravensbourne, on its passage to the Thames, but this stream is not available to a great extent as a means of transit, either for the produce of the mill or the material to be manufactured into flour. One portion of the site, which is all freehold, was purchased by the firm about 1807, and the other 1870. It was originally intended to proceed with the building upon the portion of the site first acquired, but subsequently the other portion, that occupied by the floor-cloth manufactory, came into the market, and recognizing the advantage of the larger productive power which a more ample building space would place at their disposal, the firm deferred building operations until the additional site was secured.

The building was commenced in September, 1870, Mr. Edward Badger, Blackheath Road, who subsequently erected the fabric of the Royal Mills, Vauxhall, being the Architect. The style is a modification of the Lombard-Venetian, the material being white brick, with the exception of two stone courses, the window and door arches being composed of red brick, an arrangement which adds materially to the architectural effect of the structure. The extreme length of the building is 93 feet, the width 66 feet, the height to the eaves 56 feet, and to the peak of the roof 76 feet. The roof is surmounted by a vane 19 feet high, and the chimney stack rises from its floor line to a height of 114 feet. The building has seven stories, the two first, from floor to floor, being 10 and the others 9 feet respectively, and is

composed of two distinct parts, the western portion comprising the mill, and the eastern the granary, the two divisions being divided by a substantial brick wall and double iron doors. The floors are supported on cast iron columns about 9 inches diameter, and massive wooden beams, which, in the granary department, over the dock, are further strengthened by trussed wrought iron girders, firmly fastened into the side walls, and varying from an inch and a half to two inches in diameter. Although not fire-proof, technically speaking,

were excavated to the depth of about 20 feet, and rest upon a solid basis of dry gravel. The foot courses are about 7 feet in thickness, and the walls which rise upon them are of proportionate strength and solidity. In making the excavations the trunk of a tree was found at a depth of upwards of 20 feet, a human skull, and the skull of an animal of the deer species. A Roman coin was also found.

The boiler house is attached to the mill on the north side, as shown in our engraving. The boilers, which occupy a compartment by

about 6 feet 8 inches diameter, and 10½ inches on face of cog, the second motion pinion on counter-shaft being about 3 feet 7½ inches diameter. The first length of counter-shaft is 8 inches, and diminishes to 5 inches diameter, the counter-wheels being 4 feet 2 inches diameter, and the pinions 2 feet 1 inch, the millstones making 120 revolutions per minute. The hurst frames are of iron, with iron pans bolted to the top of the frames, and provided with levelling screws. The wheat-cleaning machinery is driven from an upright shaft,

which is worked by gearing. The flour-dressing machinery is driven off a main shaft which runs through the entire mill, and is actuated by a strap from the counter shaft communicating motion to all the other shafts, sack hoists, etc., and to all the wheat-cleaning arrangements in the event of the gearing getting out of order, or should it be under repairs. The power of this purpose can be taken from either engine. Some of the counter-wheels are interchangeable, in two halves, planed together, there being sixteen pairs at work. All the gearing, shafting, and erecting within the mill was done by Mr. John Smith, Grove Iron Works, Carshalton.

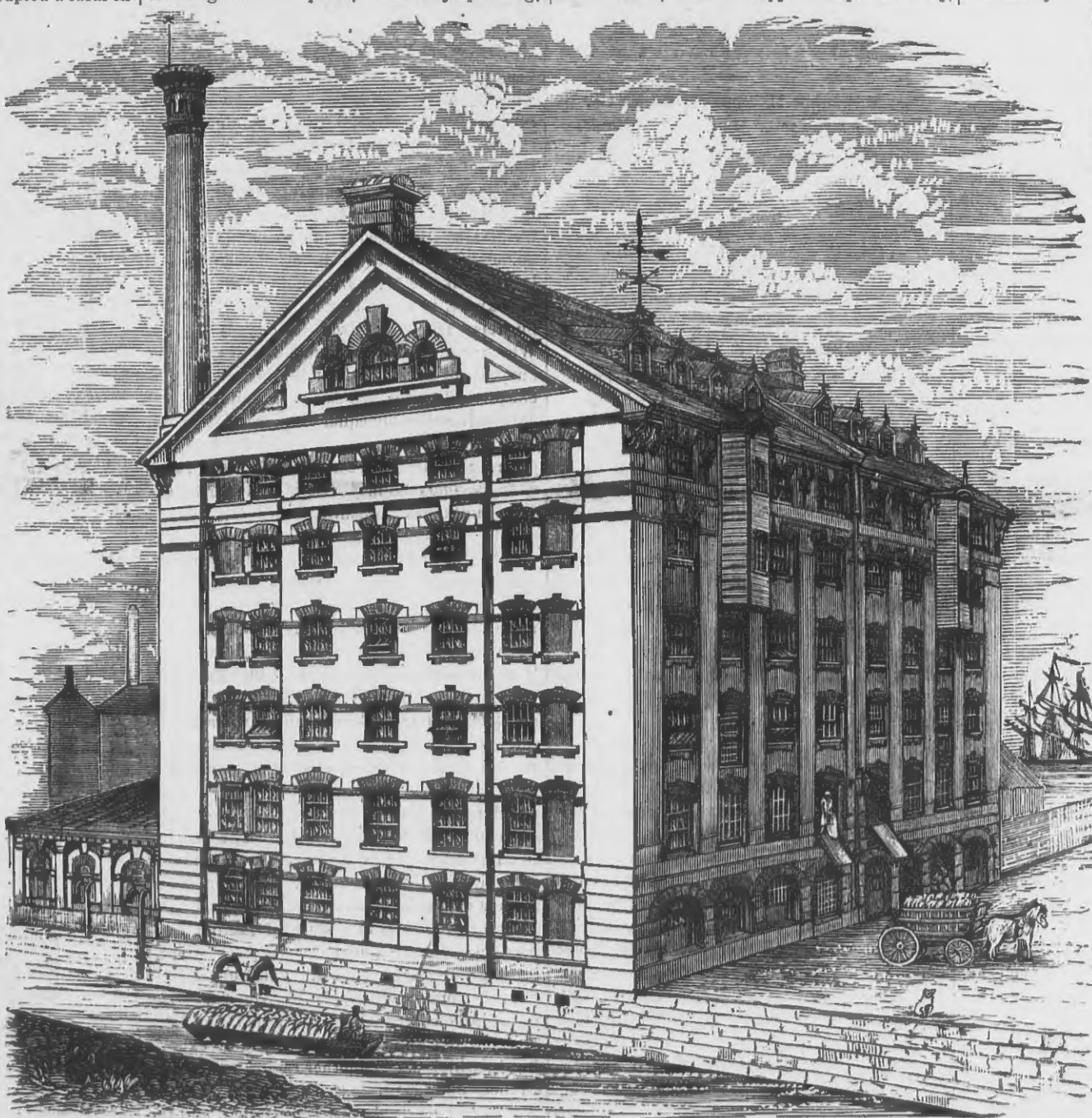
In describing the internal working of the mill we commence with the wheat, chiefly brought to the premises in barges by means of the tidal dock already mentioned, and which is continued under the first floor of the granary. The wheat-laden barge, by this arrangement, is brought immediately under the sack tackle by which it is raised to the various floors of the building. From the fifth floor of the granary the wheat is shot from the sacks into bins over the wheat-cleaning rooms, occupying, as has already been stated, two floors, and isolated as we have seen from the granary and mill by a strong party wall and double iron doors, with fire-proof roof and floors. The machinery here is driven by belts from an upright shaft,

and consists of two sets of machines which can be worked independently. The system of wheat-cleaning adopted is effective. All the dust attendant upon the operation is driven by the fans of the machines into stive passages, ventilated through air shafts surmounted by cowls, and a few seconds' residence in one of these passages while the machines are at work will convince the visitor that the work is being well done. These stive passages are perfect tempests of matter in the wildest state of commotion, the matter being the various finer impurities that have been taken from the wheat by the different processes of cleaning. From the cleaning machinery the wheat is elevated to the top of the mill, and run into the different bins connected with the millstones.

Turning to the mill, we find in its internal organization evidences of that departure from English traditional methods of milling which have begun to make themselves manifest in this country. Here the departure is certainly not of that extremely radical type which indicates a complete severance from the anchorages which were formerly deemed alone safe.

The first-motion wheel on the crank shaft is

[Continued on page 74.]



DEPTFORD BRIDGE MILLS, LONDON.

care has been taken in the arrangement of the internal structure to minimise the risks from fire. As has been stated, the granary is divided from the mill by a strong brick wall and double iron doors, and the wheat cleaning department, which extends through two floors of the building, is completely isolated from the mill and the granary by similar means.

The advantages, so far as the safety of the general structure is concerned, of this isolation were strikingly exemplified in a fire which originated in the wheat-cleaning department of the mill on Sunday morning, September 16, 1877. The entire machinery contained in the department was destroyed, but, in consequence of the localization of the fire by the structural arrangement of the room in which it originated—from an unknown cause, the mill being standing still at the time—every other part of the building and its contents were untouched. In the building itself ample provision is made by means of hydrants, etc., for meeting any sudden outbreak of fire, while in the working of the establishment the greatest precautions are taken to obviate the peculiar dangers of conflagration that are incident to flour mills. The foundations of the building

themselves, are three in number, two being of the dimensions of 7 feet 6 inches by 20 feet, and the third 8 feet 6 inches by 20 feet. All these are used for the supply of steam for the engines. The motive power consists of two compound condensing beam engines, each of 40 horses nominal, manufactured and erected by Messrs. Wentworth & Sons, of Wandsworth. The slide valves are worked by a single eccentric in each engine. The fly wheels are 16 feet 9 inches in diameter, and each weigh about 10 tons. Each engine is controlled by a "Pitcher's" hydraulic regulator, which answers admirably. We may add that one engine was erected in 1872, and indicated by the makers in 1873, when the gross indicated power, with 50 pounds pressure of steam in the boiler, and 32 revolutions per minute, with all work on, was 74 horses, and the indicated power when running empty at the same speed and pressure was only 2.5 horses. The loss by friction, therefore, was under 4 per cent, which fact speaks for itself as to the efficiency of the engine. The second engine was erected in 1875, and has not been indicated.

UNITED STATES MILLER.

E. HARRISON CAWKER, EDITOR.

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 payable to E. Harrison Cawker.
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 wise agreed upon.

MILWAUKEE, SEPTEMBER, 1879.

WE are indebted to Messrs. Marshall Bros., of Milwaukee, Wis., for a number of late Australian newspapers.

SUBSCRIBERS changing their location and writing to us to send the MILLER to their new address, will confer a favor by stating what their former address was.

Mr. L. O. DICKSON, of Athens, McMinn county, Tenn., would like to have manufacturers of mill machinery send him their catalogues. He desires to make some extensive improvements.

We will send a copy of the MILLERS' TEXT BOOK, by J. McLEAN, of Glasgow, Scotland, and the UNITED STATES MILLER, for one year, to any address in the United States or Canada, for \$1.25. Price of Text Book alone, 60 cents. Send cash or stamps.

THE Milwaukee Chamber of Commerce has fixed the following as a car load of grain: Wheat, 20,000 pounds; corn or rye, 18,000 pounds; oats or barley, 16,000 pounds. These weights have been fixed upon to accommodate the varying bulk of different kinds of grain in proportion to their weight.

THE great Agricultural Fair will be held in Kalamazoo, Mich., Sept. 28d to 26th, in National Park. Hon. Frank Little, late Secretary of the Millers' National Association, is Secretary of the society, and that accounts in a great measure for its success. The UNITED STATES MILLER hereby returns thanks for compliments extended.

The Oesterreichische Gartenlaube.

The above named journal is published at Vienna, Austria. It contains weekly, chapters of excellent novels, with many beautiful illustrations of art and of the latest inventions in Europe and other countries. The circulation of this paper is very extensive (some 30,000 per week) wherever the German language is spoken. As an advertising medium, it is of great value. We would advise our German reading friends to send for a sample copy, and we think they will be sufficiently pleased to subscribe. Address as indicated above.

MONTANA.—Montana, during the past sixteen years, has produced \$153,000,000 of gold and silver. This makes Montana rank next to California as a producer of gold. There are already 200 quartz-mines in the Territory. Iron and lead mines have been opened, and coal is plentiful. It is claimed that the cost of keeping herds of cattle in Montana is only 60 cents a head. Including taxes, a 3-year-old beef steer, which will sell on the ground for \$30, only costs \$3 for feed and care. The losses in raising are 2 per cent, while the profits vary from 25 to 40 cents per annum. In 1878 there were 250,000 head, while 22,000, valued at \$440,000, were exported to Eastern markets.

STRUCK IT RICH.—We clip the following paragraph from the *La Plata (Colo.) Miner*:

John W. Collins, of Chicago, a member of the firm of Collins & Gathmann, dealers in flour mill machinery, has been spending several weeks in Silverton and vicinity, and left for his home last Monday. Mr. Collins has made a host of friends during his visit here, and what is better, has secured by purchase and bond \$150,000 worth of mining property, which includes some as fine lodes as there are in the country. It is the intention of Mr. Collins to return to Silverton this fall and he will open and develop several of his valuable mining interests.

We are glad to note this piece of good fortune to Col. Collins. There is no doubt but with his characteristic energy and unquestioned financial and executive ability, he will reap a rich reward.

NO MORE ELEVATOR FALLS.—Chicago ingenuity seems to have invented a very simple and effectual method of preventing elevator accidents. The bottom of the elevator passage is made an air-tank, and so arranged that a falling elevator cab compresses the air gently, but completely arresting the violence of the fall. At a trial made at the Chamber of Commerce, 5,000 pounds of pig iron

being placed on the floor of the cab, which weighs two tons, the eggs and glass globes placed on the floor with the iron were unbroken. Two men came down at another trial, one with a basket full of eggs and wine glasses, and one with a brimming glass of water; nothing was broken and but little of the water was spilled, and the passengers described the sensation as being like jumping into a hay mow. The rush of air caused by the falling elevator made an appalling noise, but did no harm. Such secure alacrity in sinking has never before been heard of. —Exchange.

Cream City Notes.

The Milwaukee Middlings Millstone Co. have just received a large supply of violet blocks direct from France.

The Milwaukee Middlings Millstone Co. are now making plans for a large mill in Russia.

Work is being rapidly pushed on the new mill which is being built in this city by the Milwaukee Middlings Millstone Co.

The Milwaukee Middlings Millstone Co. are now rebuilding the mill of Mr. R. P. Owens, at Anoka, Minn., which was destroyed by fire last spring.

The Milwaukee Middlings Millstone Co. are furnishing five sixteen-inch mills to Mr. C. L. Coleman, of LaCrosse, Wis.

The Milwaukee Middlings Millstone Co. are refitting the Northwestern Mills in this city.

The Milwaukee Middlings Millstone Co. have a number of heavy contracts in Colorado.

The Milwaukee Middlings Millstone Co. are shipping a large number of mills to England.

The Cockle Separator M'fg. Co. are selling their machines as fast as they can make them, and are working their force to its utmost capacity.

The Cockle Separator M'fg. Co. will have their machines on exhibition at Minneapolis, Minn., Cincinnati, O., and Louisville, Ky.

Walker's Belt Tightener.

WHAT JOHN T. NOYE & SONS AND THEIR SUPERINTENDING MILLWRIGHT, MR. IRA WESCOTT, SAY ABOUT IT.

We are pleased to inform the milling fraternity that we have known Walker's belt tightener from the first, and that it bore an excellent reputation with millers of our acquaintance who were using it.

The material and plan of its construction insures durability, stability of form, ease, convenience, and economy in operation, and safety against the wear and tear of belts and heating of journals. We consider it a valuable acquisition in the line of mill fixtures, and recommend it as worthy of favorable consideration and liberal patronage.

Since in the spring of 1878 we have purchased tighteners of the inventor and proprietor, Mr. Geo. Walker, Hamburg, Erie County, N. Y., to supply mills of our construction in various parts of the country, and as yet having heard no complaint, we conclude that it gives general satisfaction. Mr. Walker is a skillful millwright, with whom we have been personally acquainted and had dealings in our line, during the last twenty years or more; and we take pleasure in saying that we regard him as an honorable and fair dealing man, who is entitled to the confidence of all who have occasion to deal with him.

JOHN T. NOYE & SONS.

IRA WESCOTT.

Buffalo, N. Y., Aug. 28, 1879.

The German Millers' Verdict.

BODMER'S BOLTING CLOTH TAKES THE FIRST PRIZE.

The subjoined letter will show in what high estimation the Bodmer Bolting Cloths are held by the milling fraternity in Germany. These bolting cloths have given general satisfaction wherever used in this country. They are represented by Mr. H. Pestalozzi, of 11 Dey St., New York, who will be happy to furnish mill-owners with samples and price list:

OFFICE OF H. PESTALOZZI, IMPORTER OF H. BODMER'S BOLTING CLOTHS, 11 DEY ST., NEW YORK, AUG. 13, 1879.

Editor of the United States Miller.—DEAR SIR: My Zurich house informs me of the agreeable news that the Bodmer Bolting Cloth was awarded the first prize at the recent International Exhibition of mill articles and machinery at Berlin, Germany. The verdict rendered by the jury was as follows: "For a very good silk bolting cloth." This is the highest distinction for this article. It is very gratifying for me to inform you that the sale of my cloth is rapidly increasing. Especially where strength and regularity of meshes is the chief requirement the Bodmer brand finds ready buyers, and I am glad to state that almost all important middlings purifier manufacturers are customers of mine. Very Respectfully Yours, HENRY PESTALOZZI.

America, the Leading Wheat Country.

A little over thirty years ago the *Republican* notes that grain was imported to this country from the Black Sea. During the crop year on which the country is just entering it claims that it is certain that 160,000,000 bushels of wheat will be exported to Europe, and the amount may reach 200,000,000 bushels. The grain is in this country; the only question is one of demand. The demand last year from Europe was for 150,000,000 bushels, out of a crop estimated at 420,000,000 bushels. The production this year is larger. It is one-fourth larger in Kansas. In Minnesota the production this year is 40,000,000 bushels, a large advance over last year, the grain fields of Southern Ohio show an unprecedented yield, so do those of Iowa, and in Indiana the crop will, in some cases, pay for the ground on which it stands. The wheat acreage of the country is put at 32,000,000 acres, an increase of one-fifth in two years. The average yield is placed at 12 bushels an acre and the acreage at 31,000,000 acres, by Alexander Delmar, who wrote to the *Times* in the close of July, after a trip through the wheat fields of the West, ending at Ogden. The statistician of the New York Produce Exchange puts the average yield at from 11 to 12 bushels, other more sanguine estimates carry it up to 13 or 14 bushels an acre. The lowest estimate yet made places the crop at 360,000,000 bushels, the largest at 440,000,000, and a crop of 420,000,000 may be reasonably counted upon. This is an increase in ten years of 183,000,000 bushels in the annual wheat production of this country, and an increase nearly equal to the total harvest of twenty years ago. Out of this year's harvest, reckoning the population in this country at 48,500,000, 194,000,000 bushels will be needed for consumption and 50,000,000 for seed; in all, 244,000,000; leaving, at the highest estimate, 196,000,000 for export, to which may be added 20,000,000 bushels left over from last year's crop. Whether the European demand will equal the amount of surplus wheat in this country is considered by the *Republican* as doubtful. It will unquestionably equal last year's demand, and the value of the breadstuffs exported during the coming year will probably reach \$150,000,000, and may rise to a higher figure. The unknown quantity in the wheat supply of the world is Russia. Its harvest has been pronounced far under the average for weeks past, but recent advices tell a different story. At best, however, nothing more than an average surplus for export is to be expected, not over 50,000,000 bushels; and if this is supplemented by the usual European import of 20,000,000 bushels from Roumania, and 5,000,000 from Canada and Australia, the total wheat supply which Europe is likely to receive from points outside of this country may be placed at 75,000,000. The current deficiency in Europe is placed at from 225,000,000 to 275,000,000 bushels. The demand in England is clearly known. It will amount to about 110,000,000 bushels. The demand in France can be less accurately estimated. All Northern Africa is in a state of famine, or is producing barely enough for its own supply, leaving nothing for export. This cuts off one French source of supply in Algeria. The crops in Northern Italy have failed, and Italy is importing grain already, instead of exporting it, which closes another region from which France obtains grain. The potato crop in Northern France has generally failed, and the local food supply all over the Republic is deficient. It is a low estimate, then, which places the French demand for wheat at 100,000,000 bushels. The rest of Europe will probably need 75,000,000 more, but may need less. The food supply of a continent is not a thing easily reduced to figures. Moderate estimates, however, place the demand at a larger figure than the amount of the probable surplus in this country. It will probably all be needed, but our authority is not likely that it will be called for at high prices. This is the present outlook. Very trifling causes may change the existing condition of affairs in favor of high prices. One thing is certain; no crop of wheat ever harvested in this country will be carried to market more cheaply, and none, therefore, will leave a larger margin of profit in the hands of farmer.—*Springfield Republican*, (Ill).

We respectfully request our readers when they write to persons or firms advertising in this paper, to mention that their advertisement was seen in the UNITED STATES MILLER. You will thereby oblige not only this paper, but the advertisers.

N. F. Burnham's Turbine Wheel.

The economy in the use of water-power by the turbine wheel which always receives the full hydraulic pressure through a discharge tank above the wheel, has long ago superceded the more cumbersome and less economical modes where the old-fashioned breast and overshot wheels were used. The great saving in actual power, and certainty of action till the power is exhausted, is known to all practical machinists. Consequently upright wheels, running on pinions, utilizing the entire force of the water pressure, have become the only wheel in use when economy of power is desirable.



N. F. Burnham's Standard Turbine Wheel (vertical view).

N. F. Burnham, a scientific and practical millwright, has been engaged for the past 20 years in building water wheels on the turbine principle. Since 1860 his wheels have had a national reputation, and during the intervening period it has been his constant study to further utilize the known waste of actual power arising from friction, and known mechanical imperfections in the modes of construction. His investigations have resulted in constant improvements, which have been patented from time to time.

He discovered at last the point where durability superceded in importance any possible increase of power, and knew enough to stop then. The result of his life work is the most perfect and durable wheel for the utilization of water power under all conditions—a tight head and great volume, or small volume and large-head, ever invented. His latest catalogue shows testimonials from first-class firms of undoubted judgment and integrity, from every State in the Union. It gives a detailed



N. F. Burnham's Standard Turbine Wheel (reverse view).

description of its improvement and peculiar advantages over other wheels made on the turbine principle; full directions for its use, illustrated with cuts that will give any machinist a clear idea of the wheel and its peculiar excellencies, as compared with other upright submerged water-wheels.

The accompanying cuts give a vertical and reverse view of the wheel. For orders, catalogue, or illustrated pamphlet, address, N. F. BURNHAM, P. O. Box 513, York, Pa.

THE wheat crop is too large for grinding in the United States. It will do its work in the manufacturing of wheat into flour, and the millers will select the best samples possible for milling purposes. The hard varieties of spring wheat have heretofore furnished millers, under the patent process, with the only grain subject to successful use. With improvements in machinery, it is said that winter grown wheat, of hard varieties, are being successfully used, and yield a better and whiter patent flour than spring wheat. The Clawson winter wheat seems to have all the requisites, so far as hard granules and thin skin go, to produce a good result from the improved process of manufacture. If winter wheats could render the proper yield under the new process, a new adjustment of prices would be inevitable.

IMPORTANT NOTICE TO MILLERS.—The Richmond Mill Works and Richmond Mill Furnishing Works are wholly removed to Indianapolis, Ind., with all the former patterns, tools, and machinery, and those of the firm who formerly built up and established the reputation of this house; therefore, to save delay or miscarriage, all letters intended for this concern should be addressed with care to Norlyke & Marmon Co., Indianapolis, Ind.

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We send out monthly a large number of
sample copies of THE UNITED STATES
MILLER to millers who are not subscribers.
We wish them to consider the receipt of a
sample copy as a cordial invitation to them
to become regular subscribers. We are
working our best for the milling interest
of this country, and we think it no more
than fair that our milling friends should
help the cause along by liberal subscrip-
tions. Send us One Dollar in money or
stamps, and we will send THE MILLER to
you for one year.

McLEAN'S Millers' Text Book and the UNITED
STATES MILLER, for one year, for \$1.25. Order
now. Send money or postage stamps.

R. L. DOWNTON, of St. Louis, has gone to
Europe on a brief visit.

A DOUBLE cylinder (one inside of the other)
bolting reel has been introduced in some flour
mills in Germany.

GEO. KIEFER, of Stuttgart, has introduced
a new millstone ventilator which is said to be
a success.

ELEVATOR builders are all busy and will
undoubtedly have more to do in the coming
year than ever before in one year.

A LEAVENWORTH, Kan., farmer persuaded
Allison McKeehan to marry his daughter with
a shot-gun.—E.

Why didn't he buy his other daughters shot-
guns and thus dispose of his entire family?

We respectfully request our readers when they
write to persons or firms advertising in this
paper, to mention that their advertisement was
seen in the UNITED STATES MILLER. You will
thereby oblige not only this paper, but the ad-
vertisers.

Mr. BROWER and son, of Fox Lake, Wis.,
called on us Aug. 20th. Mr. Brower says the
sales of his well-known elevator bucket are in-
creasing rapidly. The bucket is constructed
from one piece of metal and is strong and dur-
able.

A NEW USE FOR MAGNETS.—A French ex-
change has the following:

One of the most ingenious swindles yet at-
tempted has recently been brought to light in
Paris. Under the counters where goods were
weighed in small shops were magnets, which,
when placed in position by a movement of the
foot, attracted one of the scales of the balance
—the one on which goods were placed.

SOUTHERN people abhor the word "stone,"
and always say "rock." We were a little
amused the other day by a letter from a South-
ern miller, in which he spoke of "the man-
ner of dressing the MILL-ROCKS."

DAVID DOWS & Co., of Brooklyn, N. Y.,
are about to build an elevator in that city to
have a capacity of five million bushels. It
will be the largest in the world, and will cost
about \$1,750,000.

THE UNITED STATES MILLER has the
largest circulation of any milling journal pub-
lished in America, and was the first milling
journal started in America entirely independent
of connection of interest with some machine or
mill-furnishing establishment.

RECENT correspondence with millers in
Kansas indicates that the milling interests in
that State are in an excellent condition. In
some sections of the State the wheat crop is
not as good as it was expected to be, but is
still abundant. The corn crop will unques-
tionably be immense.

We would esteem it a favor if some parties
who have more than one copy of the UNITED
STATES MILLER for July will send us one.
The demand for that number has been so great
that we have but two copies left—not enough
to keep up our regular files.

ON a recent visit to Delafield, Wis., we had
the pleasure of meeting Mr. Buck, proprietor
of the Stone Mills in that village. Mr. Buck
has recently invented a new method of re-
ducing wheat to middlings and thence to flour,
which he will no doubt bring before the pub-
lic in due course of time. He feels confident
that he has made a valuable discovery.

We call the attention of our readers to the
new advertisement of Messrs. Howes, Bab-
cock & Co., of Silver Creek, N. Y. In
addition to their grain cleaning machinery
they are now manufacturing the SILVER
CREEK FLOUR PACKER, which has already
been introduced by many mill owners to their
entire satisfaction. This PACKER is conceded
to be the best in the market.

We hope all who receive sample copies of
the UNITED STATES MILLER will favor us with
their early subscription. The price—one dol-
lar per year—is a mere trifle, and ensures you
a first-class paper containing a great quantity
of matter of direct interest to your trade. Do
not delay, but send your order now. Enter-
prising, go-ahead millers cannot afford to be
without the current milling literature of the
day.

MILLERS desiring to purchase middlings puri-
fiers will do well to read the announcement of
Andrew Hunter, of Chicago, Ill. Mr. Hunter
has long experience in the manufacture of
middlings purifiers, owns 15 different patents
on them, and claims to manufacture a machine
which does not infringe on outside patents,
which he can sell for less money and do as
good work as anybody. Our readers will do
well to correspond with him on the subject.

GANZ & Co.'s ROLLER MILLS.—We desire
to call the attention of our readers to the ad-
vertisement of Ganz & Co.'s Roller Mills, on
another page. These Roller Mills have given
great satisfaction wherever they have been in-
troduced. Upwards of 2,000 sets are now in
operation in European countries, and their
extensive introduction here is only a matter of
time. Millers desiring to purchase rolls would
do well to write them for complete catalogues
and prices. Letter postage to Hungary is 5
cents. Address, Messrs. Ganz & Co., Buda-
pest, Hungary.

Again Endorsed.

Messrs. Collins & Gathman, manufacturers
of the well-known GARDEN CITY Middlings
Purifier, have lately received the following
letter which speaks for itself:

NAUVOO, Hancock County, Ill., July 27, 1879.
—GENTLEMEN: I am happy to inform you
that I started up the mill of P. Welter & Son,
on the 21st, and everything worked splendid—
the Becker brush, separator, and last but not
least, the Garden City Purifier. I have run
different makes, the _____, and
others, but find the Garden City runs easy,
without waste, and beats them all. There may
be others that do as well, but I am looking for
them. Mr. Welter is so well pleased with it
on showing him the work that he concluded
to send you a draft for the amount and not
wait the thirty day's trial. * * * If any
one in this section wants to know how a Gar-
den City Purifier works, let them come to me
or to Nauvoo, and see for themselves. Re-
spectfully yours, W. F. BRUNS.

Export Flour.

HOW TO INCREASE OUR TRADE.

To the Flour Mill Owners of the United States
—GENTLEMEN: The already large exports of
American flour to European countries, can, by
a little exertion and a trifling expense, on the
part of our leading millers, be largely in-
creased during the coming year. We have in
our possession a list of 604 firms of flour deal-
ers in Liverpool, London, Manchester, Salford,
Bristol, Hull, Carlisle, Reading, Glasgow, Bir-
mingham, Dublin, Belfast, Sligo, Galway,
Waterford, Londonderry, Limerick, Cork,
Hamburg, Rotterdam, Antwerp, Havre and
Paris, and it is our intention to mail the
UNITED STATES MILLER to all those parties
regularly for the months of September, Octo-
ber and November, and if we receive sufficient
encouragement to continue it, to do so. You
will readily see that by the insertion of your
card in these three issues you will bring your
names and goods before these foreign dealers
in breadstuffs, and thereby open up cor-
respondence which will unquestionably prove of
great financial benefit. For this purpose we
will make special rates to you. Our charge
will be one dollar per column-inch, for each
insertion of space occupied, as indicated by
this diagram:



If desired you may send an electrotype of
your mill to be inserted in your advertise-
ment. We hope you will respond immedi-
ately to this, with your copy for advertisement,
so as to be in time for the October number.
It would be well to mention the names of the
different brands of flour manufactured by you.
UNITED STATES MILLER, Milwaukee, Wis.

THE LONGEST TUNNEL IN THE WORLD.—
The Joseph II mining adit, at Schemnitz, Hun-
gary, begun in 1872 and finished last October,
is now the longest tunnel in the world. Its
length is 16,538 meters; that of the St.
Gothard tunnel being 14,920, and the Mount
Cenis tunnel being 12,233 meters. The object
of the adit is the drainage of the important
gold and silver mines at Schemnitz. It fur-
nishes a geological section more than ten
miles in length, and gives not only valuable
information as to the downward prolongation
of the lodes known in the upper levels, but
some new ones have been traversed, and the
entire series of rocks, with their mutual limits
as well as modifications and occasional tran-
sitions, are disclosed without interruption.
The entire cost of the tunnel was 4,599,000
florins—about \$2,300,000. Its height is 3
meters; width, 1.6 meter. By the methods
of working employed during the last three
years it would have taken twenty-seven years
to do the entire work.

A REMARKABLE ESCAPE.—One day recently,
as Frank Carr, of West Hopkinton, Mass.,
was engaged in sawing in his mill at that
place, he had occasion to lift a trap in the
floor, just over the flume which the water
flowed into, and through a spout six feet long
on to an iron wheel, revolving horizontally,
and which furnished power to move the ma-
chinery. The water was about six feet deep
in the flume, and the wheel was encased in a
close, circular wooden box, within which it
revolved with great velocity. Mr. Carr's at-
tention being called away, he neglected to
close the trap. His two little girls, the one
six and the other three years old, were play-
ing in another part of the mill, but soon tripped
along to the near neighborhood of the open
trap, which they did not see, and the youngest
accidentally fell into the flume and was car-
ried through the spout into the revolving
wheel. At the instant the little girl disap-
peared her sister exclaimed, "Papa, Sissey is
killed!" Mr. Carr took in the situation at the
first glance. He sprang and closed the gate
which shut the upper water from the flume,
then rushed below and, as soon as he could,
removed the covering to the wheel-box. It
took but a few moments to do that, but in the
meantime the wheel had revolved one or two
hundred times, and all the water had passed
out of the flume. Strange as it may seem, he
found the missing girl closely packed in the
wheel-box, and uninjured without a scratch or
bruise. It could not have been less than ten
minutes that the little girl was in the flume,
spout and wheel, and her escape from death
seemed almost miraculous.

British and Irish Flour Mills.

[Continued from page 71].

The new departure is tentatively cautious, but
still it is sufficiently pronounced to separate
it by a wide interval from the old system.
The initial driving machinery is situated on
the first floor, and on the same floor are the
meal troughs, provided with worms for col-
lecting the meal. The millstones, sixteen
pairs, are placed on the second floor, each
provided with exhaust produced by an effective
fan. On the third floor are five sets of Weg-
man's porcelain roller mills, indicating that in
the system of flour manufacture practiced
here the production and treatment of mid-
dlings is an important element. On the fourth
floor there are four sets of the same machines,
making in all nine sets of rollers, employed
in the softening of middlings. On the fifth
floor the pastries and wheat bins for the mill-
stones are situated. On the sixth floor are
the middlings purifiers, and on the seventh
the silk flour-dressing machines. This is a
general view of the mechanical organization
of the mill; but in addition to the machines
we have mentioned, several of the floors are
devoted to storage and other purposes, includ-
ing a workshop for the millwrights. The internal
organization of the mill is compact and con-
venient, all space being rigidly economized—
a remark that may also be made with regard
to manual labor. From the meal troughs the
meal is elevated to the silks, where it is sepa-
rated into its different component parts—
flour, middlings, pollards, brans, etc.—which
are treated by the various machines adapted
to each. The middlings, after dusting and
purification in Nagel & Kaemp's centrifugal
machines and middlings purifiers—the latter
being Messrs. Childs & Sons' "Excelsior," and
Messrs. Dell & Sons' "Economic"—pass to the
rollers for softening, the flour being dressed
by Nagel & Kaemp's centrifugal dressing ma-
chines. Such is a general view of the system
of manufacture practiced at the Deptford
Bridge Flour Mills. There are, of course,
many details in the various processes con-
nected with the work which, for obvious rea-
sons, we have not touched upon. In notices
of this description, indeed, there is no neces-
sity for any minute particularization of pro-
cesses, as they are addressed to readers whose
practical insight is sufficient to enable them
to infer particulars from a general exposition
of the principal processes indispensable to the
proper manufacture of flour. Our view of the
mill is taken from the south-west side of the
building, the point of view being the most
effective that could be selected. It is a capa-
cious and handsome structure, in all respects
worthy of its metropolitan position and its
enterprising owners.—London Miller.

HOW TO COOK CRUSHED WHEAT.—Two tea-
cups of crushed wheat to four cups of boiling
water. Stir it till all the lumps disappear, then
put it into a steamer, or double boiler, or far-
ina kettle. It can be cooked so as to be pala-
table in thirty minutes, but it is much nicer
cooked three or four hours, and in a steamer
or double boiler it can be cooked that long
without burning; but if simply boiled it can-
not cook to perfection without drying on the
kettle, occasioning much waste. Crushed
wheat, if steamed, may be cooked in milk in-
stead of water, and be improved. Serve warm
or cold, and eat with sugar and cream. After
it becomes cold it may be re-warmed in a
steamer; but never break it up. It is not nice
fried, but it may be cut in slices and put into
a quick oven till brown. When cooking
crushed wheat, whortleberries may be stirred
in fifteen minutes before it is done; but do
not break the berries while stirring. Dried
berries can be used, but must cook an hour,
and the wheat must be thicker than when
made plain. Raisins and dates are sometimes
used, but we do not think them very agreeable.
—Christian Union.

UNDER the present condition of affairs it is
impossible for Great Britain or France to com-
pete with the United States at wheat raising.
Our fresh new soil will produce more and
better wheat than the long tilled fields of
Europe. Our labor-saving machinery for till-
ing, sowing, harvesting and handling grain,
will offset the cheap labor and lack of use of la-
bor saving machinery in Europe. The compe-
tition between transportation lines of all kinds
between the West and the seaboard, and be-
tween the seaboard and Europe, puts the price
of freight to the minimum figure. If our
wheat export can be changed to flour export
we shall be happy yet.

GRAIN.

Peculiarities in its Normal and Manufactured State.

An Investigation Under the Microscope—Showing the Adulterations and Natural Evils to which It has been Subjected.

A COMPLETE INVESTIGATION OF THE SUBJECT BY ONE OF THE LEADING CHEMISTS OF EUROPE.

Flour in General—Wheat Flour—Rye Flour—Barley Meal—Oat Meal—Indian Corn—Rice Meal.

[Translated from the German of Dr. Herman Klencke expressly for the UNITED STATES MILLER.—cuts reproduced by our special engraver from the original.]

[Continued from August number.]

Fig. 18 is the microscopic representation of a sample of Cones Flour which consists of a mixture of wheat, rice and bean meal. (Compare the microscopic representations of the several pure flours.) The flour of "Durra" (*Sorghum vulgare* or *Holcus sorghum*, *Durra sativus*) called millet of Mauritania, negro or Caffrecorn, is used for the adulteration of flour, especially for that of wheat flour. This admixture is discovered by the microscopic examination of the starch particles and the fragments of the husks of this plant. The seed of this negro or Durra corn is surrounded by three membranes, the starch particles which are similar to those of maize are much larger, however, and in their center show a star-shaped figure. Fig. 19 is a representation of the husks and starch particles suitably enlarged. Flour in times of failure of crops or famine is often adulterated by the injurious admixture of the flour of the chestnut and acorn, but also of still less suitable materials. At the time of the famine in Königsberg in 1835, the flour for bread was mixed with the pollen of the aments of the hazel, and by the use of it a violent dysentery was caused; in India a kind of vetch (sweet vetch), *Lathyrus sativus* and *cicera*, was taken which caused a particular species of paralysis of the thighs, when more than a twelfth part of the flour consisted of this material. The wheat-flour destined for exportation into foreign countries is not unfrequently mixed with the ground kernels of buckwheat (*Polygonum fagopyrum*), millet (*Panicum millaceum*), cow-wheat (*Melampyrum arvense*), horned or yellow medic or kidney-vetch (*Trifolium arvense*), and of cock's comb (*Rhinanthus major*). The adulteration of wheat-flour with that of buckwheat may already be discerned by the external appearance of the flour; it is less velvety and soft to the touch, dryer, adheres less to the fingers, and has a less agreeable and much more acrid odor; here and there small fragments of a blackish color are observed which are owing to the seed husk of the buckwheat. In general the flour appears of a soiled dull white color and will pass through the hair-sieve, in washing out the gluten, more readily than pure wheat-flour. When the flour that settles first which is that of buckwheat is examined with a microscope, it will appear as is represented in Fig. 20, slightly magnified. It forms those small lumps and 59 of the buckwheat flour which has been washed out, will, when dry, yield 0.120 grammes ashes. The separated gluten of such a mixture of wheat and buckwheat flour, when moist, will appear of a blackish gray color, when dry it looks black. A chemical examination has also been tried, especially since rye, barley, etc., contain much albumen but less gluten; so Rodriguez has recommended a process which we need not here explain, however, since it is not exact. To discover an admixture of Indian corn meal, if a microscope is not at hand, the method of Manviel Lagrange may be applied, whereby it is rendered possible to discover, an admixture of Indian corn up to 4 to 5 per cent. Namely, when to such suspected flour diluted nitric acid is added, and then a solution of carbonic kali, if there is any maize present, yellow flakes will form themselves which after the escape of carbonic acid are surrounded by orange colored spots. In the same way the addition of a very much diluted solution of corrosive kali to the suspected flour will render the color of it yellow as soon as there is maize in it. Chemically to discern rye-flour in wheat-flour, Oailletet recommended the following process: 40 to 60 g. of the flour are well shaken with double the volume of ether, and then the latter is separated by filtration and evaporation of the residuum in a porcelain plate. A greasy solid mass will then remain; a mixture is made of one volume of nitric acid of 1.85 with the same volume of water and two volumes of sulphuric acid of

1.84 and then this is added to the greasy residuum in the ratio of 1 km., and this is repeated until 20 g. of the flour have been treated; it will then be seen that a yellow color will appear from the fatty oil of the wheat, but a dark red color from the fatty oil of the rye, a color ranging between the two on the other

the form of a plate when put in a saucer, has a yellowish light color and resembles purified glue. If there is rye-flour among it, the gluten will appear slimy, uneven and blackish, become porous, adhere to the fingers, and when put on a saucer runs over the whole surface of it. If there is barley meal among the

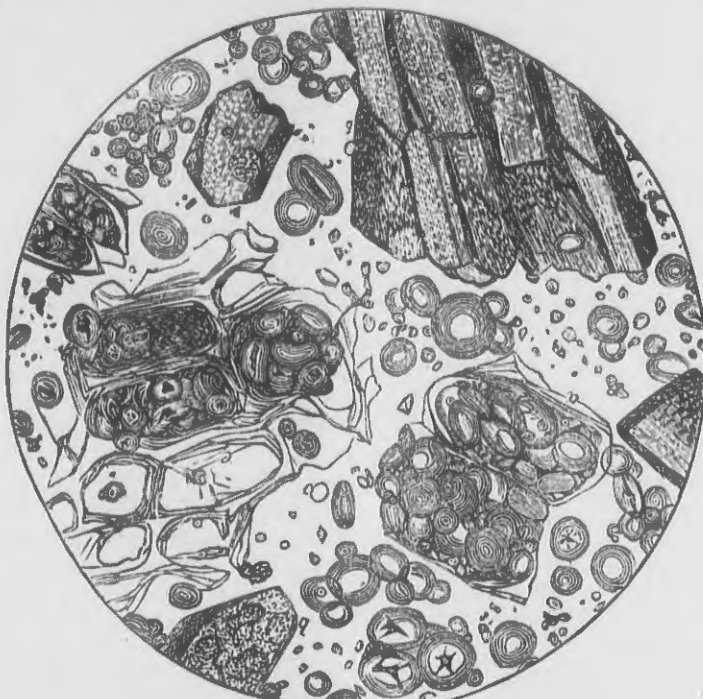
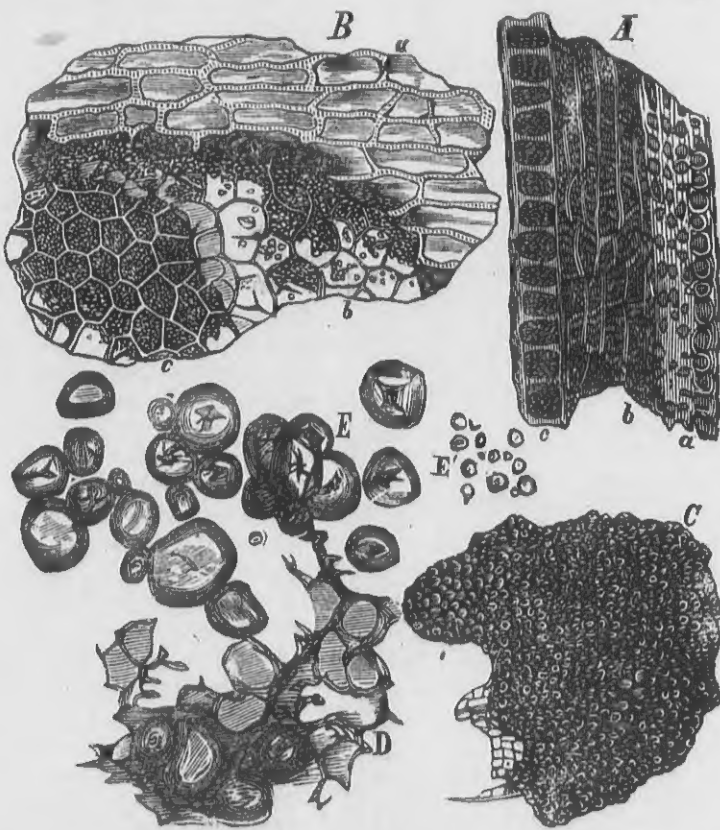


Fig. 19. Cono's flour magnified 225 times.

hand, when wheat and rye-flour have been mixed. It has further been discovered that by the quantity of ashes contained in the different kinds of flour, foreign admixtures may be discerned, since good bolted wheat-flour, previously thoroughly dried at a temperature of 100° Celsius and then burned to ashes, will give a fixed and definite percentage of it.

wheat-flour the gluten will appear dry and not slimy, will not combine, form worm-like cords twisted and wound about themselves and has a brown soiled reddish color. If the wheat-flour is adulterated with oatmeal, the gluten will appear of a blackish yellow color and have a large number of small white spots on its surface. If the wheat-flour contains an



Starch particles and fragments of the hull of Durra or African wheat. A, sectional view of the hull magnified 200 times. a, outer; b, middle; c, inner membranes of the hull or cover of berry. a b c, outer, middle and inner hull membranes. C, substance of the body proper of the berry, showing cells wherein are the starch particles, magnified 100 times.

So 5 g. of flour, for instance, will never give more than 0.045 g. Louyet has tabulated this, which is all the more valuable, since it must really be admitted that the quantitative examination of ashes allows one to judge pretty accurately of the kind of the flour. Dried at a temperature of 100° C., and burned to ashes, the following results will be obtained:

5 g. of wheat-flour.....	0.045 g. of ashes
5 g. of maize or Indian corn.....	0.068 g. of ashes
5 g. of rye-flour.....	0.50-0.55 g. of ashes
5 g. of barley.....	0.119 g. of ashes
5 g. of sifted oat meal.....	0.106 g. of ashes
5 g. of husked rice meal.....	0.021 g. of ashes
5 g. of potato starch.....	0.070 g. of ashes

A mixture of wheat and rye-flour will not yield more ashes than pure wheat-flour on account of the similarity of their contents of ashes, but these ashes possess a slight alkaline reaction. Barley meal contains very much silicic acid (from 21 to 29 per cent), and by chemical analysis the presence of barley meal may be assumed by the presence of much silicic acid. We shall speak hereafter of the method of the incineration of the flour for the purpose of detecting foreign mineral admixtures. The condition and quality of the gluten has also become a means of thereby discerning the different kinds of flour. Villaine especially has made many comparative experiments thereupon. We have already mentioned by what method the gluten may be separated from the flour. The gluten of wheat-flour is thoroughly uniform, spreads in

admixture of maize, the gluten is yellow, not slimy, but rather compact and will not spread itself over the saucer. These differences in the gluten may already be discerned even when 5 per cent of foreign flour are mixed with the wheat-flour. Very often wheat-flour is mixed with the flour of the legumes, peas, lentils and beans. In general there is already cause

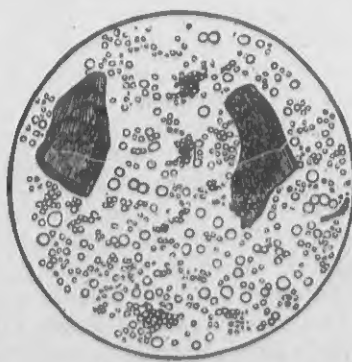


Fig. 21. Buckwheat flour magnified 50 times.

for suspicion when the flour looks uncommonly glossy, the smell and taste also indicate the presence of flour of legumes. The microscope is a safe and infallible expedient in this case, and we refer to the picture of the starch particles of peas, lentils and beans and Fig. 16. Chemically a great number of methods have been recommended, but these are partly entirely unreliable, partly they are only means

of assistance for the microscopic examination. Galvani who first practically busied himself with the subject already observed that the flour of legumes deprived the gluten of grain of its adhesion, and took away its elasticity rendering it capable of passing through a hair-sieve which it can otherwise not. Orfila repeated these experiments, and discovered that the gluten was put into a state of great divisibility by the legume of flours. Galvani also observed that a mixture of 7 g. of bean meal or 8 g. of vetch meal with 20 g. of grain flour was already sufficient to make it impossible to distinguish the gluten. We omit the methods of examination of Rodriguez and Cavalie recommended in France since they are neither precise or satisfactory, but we will here mention several other methods which by comparing their respective results may become pretty safe expedients.

Selection of Burrs for Grinding Wheat.

BY J. W. TRUAX.

Among the many things in building a flour mill, and one which is of importance, is the selecting of the burrs. Millers may differ somewhat about this, but at the same time there is a common sense view that should govern. My view is, a rather gritty, tough, closed, light cream-colored, old stock is the best for wheat. This quality of burrs is the most preferable because it is more free from openness, or what is called honey comb, and is of fine texture, and is possessed of tough nature, and will not shell or crackle when being cracked. It is one grand point gained, to be sure, to have a mill-stone that can be cracked fine, and not crackle the face of the stones between the cracks. Not so with the light blue flint stone. The blue stone will crackle when being cracked, and is void of a grit or sharpness, and will easily glaze over and become slippery. A slippery stone rubs and heats the grain, but does not granulate; flattens the particles, but does not round them. Good flour is composed of rounded particles, while flattened flour is clammy and dead.

A porous or open stone is also a bad quality of burr for wheat, and for the reason that the bran turns and returns over in the honey comb cells, and is caught edgewise and sheared to atoms, and is bolted in with the flour. This open quality of stone will grind faster, perhaps, than most other kinds, but will put more specks in the flour than any other, and the blue flint will make a more brown, dead flour, while the tough, gritty, light cream stone is a stone that is the most free from cells or glossy surface, and will grind the meaty part of the kernel into a fine, round flour, and leave the bran broader and cleaner than any other quality of burr. My experience has taught me this, and I am warranted in recommending what my experience has taught. I recommend that every miller and mill-owner be wise, and use with their experience a good degree of practical judgment, when selecting burrs for flouring mills. Common sense and good judgment will go a good ways, with the help of experience, in filling the pockets of the mill capitalists in this direction. Every miller desires to get rich. To do so he must make the best possible selection of mill materials, materials the most skillfully made up, and use the best tools to do it.

VELOCITY OF WATER IN SIPHONS.—The velocity of water in a siphon does not depend upon the depth of a well, or the length of the siphon under water, but on its height and the difference between the height of the water in the well and the lower opening of the siphon from which the water discharges. If there were no friction or inertia, the velocity would always be equal to that obtained by a body falling freely through that height. For instance, let the discharging opening of the siphon be 15 feet below the surface of the water in the well, then the water flowing out would have a velocity of 80 feet per second; but it is always considerably less by reason of the inertia and friction of the water against the tube. The amount of this retardation is difficult to determine exactly, as it depends upon the width of the tube, the smoothness of its interior surface, its more or less sharp bends, and the height of the siphon. Thus, a siphon that discharges the water 15 feet below its surface, will discharge most and be nearest to the above statement when it is very wide and very smooth interiorly, when the bend is like the arc of a large circle, and also when the bend does not rise much above the surface of the water. On the contrary, the velocity named is more or less retarded by the pipe being more or less narrow or rough, bent at sharp angles, and by having to raise the water to a greater or lesser height before the descent begins.

Ohio Millers' State Association

The third Annual Convention of the Ohio Millers' State Association was held at Akron, on July 8, the President, Ferd. Schumacher, in the chair. About twenty-five members were present.

The President opened the meeting with his address, which was as follows:

Gentlemen: In this, our third Annual Convention, the one important feature to be considered is the compromise by the Sub-Executive Committee of the National Millers' Association with the Consolidated Middlings Purifier Co. It was reported at Chicago to the Convention within half an hour of its adjournment, and although indorsed almost unanimously, has been, and is now the cause of considerable dissatisfaction. If the Executive Committee had left the whole matter, as well as the Downton claim, subject to the final decision of the Supreme Court, no fault could have been found. It must be admitted, however, that the interest of the members of said committee is identical with our own, that undoubtedly they have acted in accordance with their best judgment, and having once indorsed and thus morally strengthened and sustained the claims of the Consolidated Middlings Purifier Co., we have no choice but to sanction the arrangement, or bid farewell to the National Millers' Association. For one, I am not prepared to do this, but to guard against a similar state of affairs in future, and to preserve the integrity of our National Association, I deem it my duty to add that by the terms of its new constitution the "Sub-Committee of three" is virtually clothed with such arbitrary executive power that this should be modified or its decrees ought not to be binding until after due and mature consideration, they shall be indorsed, not only by the Executive Committee as a whole, but also by two-thirds of all State organizations, or two-thirds of the number of burrs represented by the National Association. An amendment to this effect to the National Constitution seems advisable.

To those who appreciate the value of the National Association it is no satisfaction to be told that they may reject the proposition and contest singlehanded, claims, the merit of which the National Association was formed and supported to establish or reject.

If you look upon these questions as I do, it will be your duty to indorse a constitution upon a strictly legal basis, for the defense of its members, so as to be in harmony with the National Constitution adopted at Chicago, and also to elect a member of the Executive Committee, as well as a new presiding officer of this Association, from the duties of which I earnestly desire to be relieved, that an able man, who can and will devote more time to the duties of the office, may be elected, for I am free to admit that the millers of the great State of Ohio are not as fully represented as it would seem their own interests would suggest.

According to Toledo estimates, Ohio is yet in arrears, which may and should be covered. But, as I said in Chicago, this falling, I am convinced that the only true way is to reassess all States in accordance with the actual number of burrs represented.

I desire to refer this whole matter, with some important correspondence, touching upon these several subjects, to a committee, which also might be intrusted with the nomination of officers. It is to be hoped that this and our several standing committees will report promptly; but if some of the latter are not prepared to do so, the very full reports of the Chicago and Indianapolis Conventions are available for discussion.

The President's address was adopted by the Convention, after which he read a very lengthy private correspondence which had passed between himself and Mr. Seaman and Mr. Seybt. These letters were in reference to the compromise, and tried to more fully explain the position of the Sub-Executive Committee of the National Association. After these were read, a Committee was appointed to report upon the adoption of a constitution to conform with that of the National Association. The Committee was composed of the following gentlemen: Mr. Baldwin, Mr. Camp, Mr. Griffith, Mr. Colton and Mr. Schumacher.

A Committee on Nominations was also appointed, consisting of Mr. Hardesty, Mr. Brown and Mr. Turner.

The Treasurer then made his report, which showed a balance on hand of \$297.46. No new members have been added since last report, and but 28 of the 68 members have paid the assessments made by the National Association. One hundred and seven run of stone is represented in the Association, fully paid up.

The Treasurer's report was adopted. The meeting then adjourned until half-past one o'clock.

On reassembling, the President called for the report on transportation, which was read by Mr. Barney, as follows:

The following resolutions on the subject of railway discriminations were adopted by the New York Board of Trade and Transportation at a regular meeting, June 10:

Whereas, The general prosperity of our country is largely dependent on a system of railway transportation fair and equitable in its operations to all classes of citizens and business; and

Whereas, Through combinations and consolidations of the principal railroads of the United States, which have not infrequently been effected through corrupt and unscrupulous methods, a comparatively few persons have secured almost absolute control of these highways of commerce, and have, to a great extent, used them to further their private ends, ignoring the rights of the public; therefore

Resolved, That this Board affirms its convictions that Federal and State railroad commissioners should be appointed at the earliest practical day, clothed with such legal power as would enable him to protect the rights of the people.

Resolved, That this Board tender its thanks to the Hon. John H. Reagan, of Texas, for the reintroduction of his bill, appointing United States commissioners to regulate inter-State commerce, and that this Board will use its influence in aid of its passage.

We extract this brief quotation from a speech of Edmund Smith, Vice President of the Pennsylvania Railroad Company:

"The great cardinal principle which should pervade this question of rates is that the rate on the same class of goods for the same quantity for the same distance should be the same to every one."

We cheerfully indorse the above, and add that however low a rate we may secure, if lower are granted from distant points West of us, it does not benefit us. We hold that all through transportation should be based on so much per ton per mile. Every shipper and locality are then protected. Protective rates are what we desire more than low rates, and we hope to be able to show the different transportation companies how this can be accomplished, and that, too, without loss to them—in fact with mutual benefit. In our locality, where there is no great capital invested in elevators and warehouses, place wheat in a different class of freight than flour and feed, only a slight figure higher; this would give the mills the chance to manufacture all the wheat in our State, and we have the ability to do so, but, under the present state of facts, the mills cannot sustain themselves against wheat buyers, who can order in cars on any siding, fill them, and on the receipt for same get a discount on the bill of lading, and so proceed. In this instance, not a dollar of capital is required. The millers have large capital permanently invested, subject to ruinous risks, constant expenditures for improvements, patents, and handicapped in many ways. This arrangement would give the railroads double freight on the same goods, both to and from our mills, then, too, we could furnish constant regular freight the year round. As it is now, a few days of commotion, unusual demand for cars, and the wheat has left our country, and our mills must lie idle much of the time—all this can be adjusted by placing wheat in a different class from what it is now rated. We demand this on the assurance that we are not protected in our interests, and that our business is not paying us in proportion to the risks and expenditures we have to incur; or if the present classification is maintained on wheat and flour, then give us a rebate of freight paid by us on wheat to our mills. We ask only for equal status, then if we cannot sustain ourselves as individuals and associations we will not demand assistance. We repeat our recommendation as expressed to you one year ago, for a through rate of freight on wheat from the West to the seaboard at the customary rates, with permission to manufacture it in transit, paying for all delay incurred. With such an arrangement every mill in our State could and would run full time the year round. We entertain the opinion that the action of our association the last year benefitted us to an extent hardly to have been anticipated; that our rates for transportation are better than ever before; that with slight modification we will secure such rates as are satisfactory, protective and mutually beneficial.

Mr. Barney's report was voted upon and adopted without any further remarks being made on this subject.

The new constitution was the next business before the meeting, and the new constitution, as adopted by the Minnesota State Association was taken as a basis. Copies of this constitution were circulated among the members. This constitution which is the same as has been adopted by all of the State Associations that have met since the last National Convention in Chicago, was read by the Secretary, Mr. Colton, and was voted upon by sections first, and was then adopted as a whole. The only changes made were in Section 2, which was amended so as to give the power of setting the time and place of the meetings into the hands of the President and Secretary; in Section 4, in adding to the clause, "The Executive Committee be authorized to arrange with the owners of meritorious patents for reasonable terms for the use of the same by members of this association," the words, "Subject to the approval of a two-thirds vote." Further alterations, consisted in changing Article 9 so as to give members the privilege of withdrawing from the agreements contained in the constitution at any time, provided that said member has paid up all assessments made for the year then pending. Article 10 of the constitution, as adopted, and which refers to the admission of new members was changed to read:

"No member shall hereafter be admitted to this association, except as provided in the last preceding section, without paying in full the amount of all assessments theretofore paid by the then existing members, including the amounts paid by the members of the State Association as heretofore organized; provided, that the Executive Committee shall have the full power to admit as members any mills not benefited or protected by the expenditure up to January 1, 1879, on such terms as they may deem equitable, and also to reject any applicants for any cause which they may deem sufficient."

After adopting this constitution, which harmonized the Ohio State Association with the National Association, the report of the Committee on Nominations was called for. The committee recommended that the old officers be reappointed, and this recommendation meeting with the approval of the millers, the old officers were all re-elected by popular voice. The business of the Convention then being at an end, after some informal and friendly talk the President announced the meeting adjourned *sine die*.

THE WHEAT BOOM.

How It Is Affecting Philadelphia Shipping Interests.

Startling Figures Which Evidence This Year's Cereal Wealth.

"There has been a heavier wheat export business this year from the port of Philadelphia than ever before," said Collector of Customs Tutton yesterday. "To be more explicit, and as a fair sample of the tonnage sent abroad," he continued, "there were exported from this port during the month of July, 1878, 265,790 bushels of wheat; for the same month, 1879, the amount has increased to 1,064,549 bushels, or more than four times as much as during the previous year. Vessel owners are in such a hurry to reload that they have asked this office for the privilege of unloading at night."

The subject of Collector Tutton's remarks was corroborated by shipbrokers. Some of them admitted that there were not enough vessels in port to supply the demand for wheat abroad—a demand that was due to the failure of the wheat crop in France, the United Kingdom, Italy and Portugal. In the first-mentioned country alone the Minister of Commerce estimates that the expenditure of £20,000,000 will be required to make good the deficiency in the wheat crop.

THE WHY AND WHEREFORE.—Many of the vessels, also, that usually anchor at this port have gone to New York and Baltimore, where, it is said, a larger sum is paid for chartering them. The present scant supply of wheat in Europe is owing to the small stock of last year's crop on hand, and the "scarcity is increased" by, as has been said, failures in the crop, and although the latest advices are more cheerful regarding the harvest, on the Continent, still the falling off from the average crop will necessitate a vast consumption of American breadstuffs.

The wheat now being exported from the United States is chiefly last year's crop. The product of 1879 will not be put upon the market in any considerable quantity before the 1st of November. Minnesota, Iowa, Illinois, Ohio and Indiana furnish the larger part of the wheat in elevators and on cars in the seaboard cities, and it is estimated by statisticians that if the entire surplusage of the wheat crop of the United States for the present year were shipped it would, without addition, feed twice the entire population of the Eastern Hemisphere.

REGARDING TRANSPORTATION.—Naturally the price asked by shipowners for the loan of their vessels has advanced with the foreign demand for wheat. The ship is hired or chartered by its capacity to carry so many quarters—eight bushels—of wheat. A vessel carrying 3,000 quarters could last year be obtained for 5s 6d per quarter, to go to a Continental port, Cork, Portsmouth, Falmouth, or Plymouth for orders—the last two words meaning that the vessel must stay at either one of the three last mentioned ports until she receives orders to go elsewhere. Possibly the Kamachkans may have run out of wheat or cultivated an appetite for biscuits, and the charter-party may think there is much profit in sending a cargo of breadstuffs to that bleak and sunless territory. If so, the captain weighs anchor for Kamachkatka. If he is not ordered to go somewhere within a certain time the party chartering pays him for "lay" days—in other words, the owner is paid for his time.

AN OFFICIAL OPINION.—There are no vessels at present to be chartered. At least, this is what was told a *Press* reporter yesterday by several gentlemen interested in the business—an opinion that was corroborated by numer-

ous disinterested landmen. It was further remarked that a 3,600 quarter vessel would command from "5.9 to 6.6, possibly 7, spot, and 5.4 to 6, to arrive."

An enthusiastic broker explained the algebraic quotation as follows: It meant that a ship carrying 30,000 bushels of wheat, if at this port now, on the spot, would be paid from 5s 9d to 6s 6d per quarter to carry a cargo of wheat to a direct continental port, Cork, Portsmouth, Falmouth or Plymouth for orders.

"Supposing they carried more than 30,000 bushels?"

"Then the rate is generally lower; but it is about the same whether they carry 30,000 bushels or less."

"To any port?"

TRICKS OF THE TRADE.—"Oh, no; distance has something to do with it. The price is greater to the ports of Spain, Portugal and those on the Mediterranean coast, than to Antwerp, Bordeaux or the Hague."

"How many days will an average sailing vessel consume in going from Philadelphia to Liverpool and back?"

"Barring accidents, seventy days; ten of which will be devoted to loading and unloading, and sixty to her trip across the ocean."

"The broker doesn't own the cargo?"

"No; he simply acts as middle-man between the speculator and the owner of the vessel. If a bargain is made, a contract cements the obligations of both. Once clear of this port, the broker has nothing further to do with the vessel. Everything is under the captain's orders, subject to the conditions of the contract."

"Is this activity likely to be prolonged?"

"I think so. However that question can be more satisfactorily answered when the status of the foreign wheat crop is more a matter of fact than of speculation."

"Then Mr. Keene, the great wheat cornerer, has not been the only fortunate adventurer in wheat?"

HOW TO GET RICH ON WHEAT.—"Not by any means. While he has been the most extensive, there are other millionaires who have also profited to an agreeable extent. Lucrative business? You can make the calculation for yourself. Here are to-day's 8 o'clock Liverpool quotations: California wheat averages, 8s 6d to 9s 7d; red Western spring wheat, 7s 10d to 8s 9d; red winter, 9s 2d to 9s 3d. In other words, wheat sold in Liverpool yesterday at from \$2.04 to \$2.22. Here the range is from \$1.08 bid to \$1.08½ asked. Take 6s as the average cost of transportation per quarter, which would be about \$1.44 for eight bushels, or 18 cents a bushel. This would make wheat delivered in Europe cost \$1.26 for every four pecks—about 96 cents a bushel profit by that calculation. Of course, there are other items of expenditure that will reduce the figure, but not a great deal—not below 85 or 86 cents, I should think."

THE DANGERS OF THE DEEP.—"A wheat cargo is liable to all kinds of accidents, ship foundering, heating the grain, etc., is it not?"

"Of course there is a risk that the ship will founder. But that may happen whenever an incompetent officer, a rough sea and sharp rocks come together. But this is not taken largely into account by mariners. The great fear is that the wheat in bulk will heat, and instead of selling for No. 2 red Western, go on the market as damaged and only fit for the distillery."

"Can America compete with Russia in the European grain trade?"

"That depends. I think she can. If, however, Russia this year raises a crop of wheat beyond her own demands she will, of course, look out for some other market. How far she will carry her search for that other market depends upon the amount of stock she has on hand. The United States, because of the immense crop of this year elsewhere unsalable, can afford to risk largely in finding an outlet for her cereals."

And thus, from information obtained, therefore, it appears that not only the iron and sugar market are on a boom, but also that the wheat market, like this year's growing crop, is heading out tremendously.—*Philadelphia Press*.

THE newest thing in machinery is a device for tracklaying. It has been successfully used on the Central Pacific and other railroads. It consists of an application of a system of adjustable ways, on each side of a train of flat cars, by means of which the rails are brought forward on one side and ties on the other, in a continuous stream, and delivered to the trackmen on the exact part of the road bed where they are to be laid.

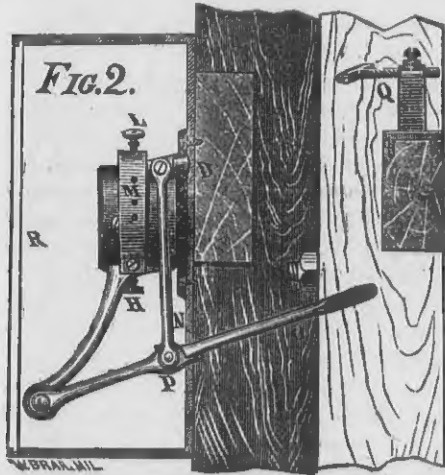
Durant's Adjustable Tally.

The inventive genius of millers has been exercised during the past decade more than for the preceding century, and anything possible to save or lighten the labor of the miller is considered of importance. Among the many inventions of real value, we are pleased to note the Adjustable Flour Tally, invented and manufactured by Mr. W. N. Durant, of Milwaukee, Wis. Mr. Durant has studied and experimented for a long time in order to produce a machine which would be simple and durable in construction, and register accurately and automatically, eighths, quarters, halves and barrels of flour, as it comes from the flour packer. We present herewith two illustrations, Fig. 1 showing the interior view of the Tally, and Fig. 2 the Tally in connection with the Eureka Flour Packer.



DESCRIPTION.

A, ratchet-wheel revolving on shaft B; C, wheel secured to ratchet-wheel, and revolves with it; D, lever secured to shaft B; E, spring-pawl attached to shaft B, and operating the ratchet-wheel; F, spring-pawl to prevent ratchet-wheel from slipping back; G, a U shaped plate operated by a rod connected to knob H, and used to throw the pawl E out of gear, and prevent the machine from tallying while setting it from barrels to halves, quarters or eighths; I, pinion wheel connecting a chain of gear wheels with C, and operating the hand on the dial indicating fractional parts of a barrel; J, wheel operating hand on dial indicating whole barrels; K, operates hand indicating tens, the next wheel hundreds, etc.; L, pin placed in guage M to regulate the stroke of lever D; N, rod connecting D with lever O (lever O is provided with an elbow joint at P, Fig. 2); Q, an adjustable bolt attached to platform of packer, and operating the Tally; R, box enclosing Tally.



In connection with the Eureka Packer, the Tally works as follows:

As the platform of the Packer moves down, the bolt, Q, catches on the point of O, and carries it down till D reaches the bottom of the gauge, M; a spiral spring connected to shaft B, back of the ratchet-wheel, brings D and connection back to its former position. Lever D, moving from the top to the bottom of gauge M, causes the ratchet-wheel and wheel C to make one-fifth of a revolution. The pinion I being one-fifth as large as C, makes one revolution; J being ten times as large as I will make one-tenth of a revolution, and tally one barrel.

If the pin L be placed in the hole marked K, lever D will vibrate only from the pin to the bottom of the gauge, and cause wheels A and C to make only one-tenth of a revolution, the pinion I will move one-half around and tally half a barrel. If the pin be placed in the K hole, wheels A and C will make one-twentieth of a revolution, and I will move one-quarter around and tally a quarter of a barrel. The same proportion for eighths.

As the platform of the Packer goes up, the bolt strikes on the bottom of lever O, and lifts it up sufficient to let the bolt pass.

The device for changing these machines to tally barrels or fractional parts of a barrel is very simple, and it takes but a few seconds to make the change. It is impossible to set these tallies back, and when they have tallied up to their capacity, they will set themselves and commence over again. They are made entirely of metal, which renders them strong and durable. These machines are made of the best material, and by good workmen, and, if properly adjusted, each machine is WARRANTED to tally ACCURATELY each barrel or sack as it is being packed. An attachment for the Packer accompanies each machine; the wooden box that covers the tally is secured by lock and key. This box prevents strangers from meddling with the machine, and it also forms a guard around the connection. With these tallies you are able to see, at a glance, the exact number of barrels packed each day, month or year, and in taking a yield much time and trouble is saved. They can be attached and put in accurate working order in fifteen or twenty minutes.

Subscribe for the U. S. MILLER; \$1 per year.

It has been estimated that Europe will pay out, during the coming year, \$600,000,000 to foreign countries, and of that, one half at least will be sent to this country. This is an encouraging prospect for the United States. Among the industries which will receive the largest benefit is the flour milling industry. Already our flour exports have reached enormous proportions, and they are steadily increasing. It is said that a successful bran packer and package have been invented and that exports of bran have already been made. Should this prove true, it will be a very important trade in the near future.

A Mammoth Grain Depot.

In San Francisco, from which point our bulk of the grain is shipped, huge warehouses are placed at available points on the city front, convenient to the shipping, and in positions where grain may be landed from barges without too much handling. The most extensive and complete enterprise of this character is the warehouse and grain depot, owned by the California Dry Dock Company, and situated on Mission Rock, an Island about 600 yards from the city front, near the Pacific Mail Steamship Co.'s wharves.

The whole property owned by the company aggregates 14 acres, of which 8½ acres are covered by wharves, the warehouses covering over 2½ acres. At any point of the wharf there is sufficient depth of water to load and float the largest ships at extreme low water, and the warehouses are accessible to receive or ship grain from all sides. There is room at the wharves to accommodate a dozen large ships at one time. The company have a small steam ferry boat, making half-hourly trips, free, to and from the landing at the foot of Second street.

We made a visit to the warehouses recently and were impressed by their great size and the extreme neatness and thoroughness of the structures and all their appointments. At convenient points encircling the warehouses are placed tanks, numbered, which are kept filled with water for the extinguishment of fire. Rows of fire buckets are placed about in different directions. The engine houses are intended for sheltering the hoisting engines when not in use, these engines being used for loading or discharging cargoes.

The grader is the only appliance of the kind on the coast, and was but recently introduced here. This new and improved machinery, for cleaning and grading wheat for export, has a capacity of 50 tons per hour.

It is well known that the San Francisco Produce Exchange have a standard of Nos. 1, 2 and 3, by which grain is bought and sold, according to quality. This grader is intended for procuring either of these grades, according to the desire of the owner. For instance, a buyer purchases a number of lots of wheat, some good and some poor, some dirty and some clean. He may have seven or eight varieties. From his samples he makes a grade which suits him, and then directs the Superintendent of the warehouse to grade the wheat in accordance with the samples sent. That is, take two sacks of the first class, three of the second, eight or nine of third, and so on. The proportionate quantity of each lot is put into the grader. This machine takes the grain, mixes it thoroughly, takes out more or less dirt, chaff, straw, etc., so as to bring the batch to the required grade. If it is wanted thoroughly clean, it can be made so. If only a second or third grade is wanted, the machine is arranged to take out more or less foreign substances as desired.

The wheat is put into a hopper and elevated to the top, where it falls into a series of shaking screens where it is cleaned and mixed, and comes out below again prepared to required grade, and is then sacked for market. Buyers can in this way average their purchases so as to bring them to suitable standards. This machine is available for cleaning wheat where it is not desired to grade it.

Grain stored in these warehouses is always accessible to the market and high rates may be obtained at all times. The warehouses are light, airy, clean and free from rats. Danger of fire is very slight, the insurance being only 1 per cent per annum. Grain consigned to this company by water is insured in open policy at special rates. Wheat shipped by railroad via Stockton care of the California Steam Navigation Company will be received by them at Stockton and delivered at Mission Rock warehouse at same rate of freight as to Oakland wharf.

Season storage ending June 1st, 1880 is \$1 per ton. Short rates of storage are, for first month, 80 cents per ton, or 40 cents per ton, if delivered. Each month thereafter, 20 cents

per ton. The weighing in is free, but weighing out is charged 10 cents per ton.

The company are prepared to advance money at bottom rates, with interest payable at end of loan. Freight is paid, and fire insurance and loans are effected free of commission. The premises of this company are a model of neatness, and it is really worth a visit to inspect the mammoth warehouse and grain depot of the coast. The little ferry steamer carries passengers free, and Mr. Sinclair, the Superintendent, will take pleasure in showing visitors around. The wharves are built over the old Mission rock, and the area under the warehouses is filled in so that the superstructure is solid and substantial. The officers of the company owning this property are: Oliver Eldridge, President; W. C. Gibbs, Secretary; and Chas. H. Sinclair, Superintendent. The office is 318 California street. The entire storage capacity for grain, at present, is 40,000 tons, which can be easily increased.—*Mining and Scientific Press* (San Francisco).

Shall Our Houses Be Painted or Plastered?

Of course, says the *American Builder*, everybody knows, or ought to know, that walls and ceilings are finished with plaster. But everybody may not be aware that plaster has the property of absorbing moisture. This, perhaps, will not take place in rooms where a fire is kept steadily; but in rooms left, as is often the case, for weeks without a fire, the walls will take up a considerable quantity of damp. The effect will be injurious to the health of the inmates. There are few persons who have not suffered from a mysterious cold, caught they know not how, though, perhaps, damp in the plaster had something to do with it.

The extent to which damp is absorbed in a plastered wall may be discovered by noticing what so often takes place in the rooms where the walls are painted and have become chilled by a season of cold weather. As soon as the temperature becomes warmer the atmosphere is condensed on the walls, and at times in such quantities as to run off in streams. Now, had it not been for the paint, the greater portion of this moisture would have been absorbed by the plastered walls. And as a consequence the quality of the plaster would have been impaired and the room made unwholesome. In view of this defect in plastered walls, it becomes a question well worth considering, whether, in finishing a house, the walls should be papered or painted. If paint is decided on, it is highly necessary that the painting be properly done and good materials employed. White lead, which is the chief ingredient of all paint used is of late years heavily adulterated—a season why some painters can do work so much cheaper than others. There are also dishonest painters who will lay on nothing but "whiting" and size for the first coat, and finish off with one coat of oil paint. It is not easy to detect the fraud at the time, but as such paint soon wears off the wall, and attaches itself to the garments of those who rub against it, the customer speedily finds out that he has been cheated. It takes three or four coats of good oil paint honestly laid on to make good work of painting plastered walls.

In painting walls there is ample scope for taste, and such colors may be chosen as are most suitable for each apartment, and in harmony with the furniture. Apartments lighted from the south and west, particularly in a summer residence, should be cool in their coloring; but the apartments of a town house ought all to approach toward a warm tone. In a drawing room the coloring should be characterized by vivacity, gayety, and light cheerfulness; by light tints of brilliant colors with a considerable degree of contrast and gilding—the walls being kept in due subordination to the furniture, though partaking of the general liveliness. The characteristic coloring of dining rooms should be warm, rich and substantial, without vivid contrast, and gilding should be avoided, unless in small quantities for the sake of relief. Parlors ought to be in a medium style, between that of drawing room and dining room. Libraries should be solemn, grave and quiet in color and finish, while bed-chambers should be light, cleanly and exceedingly cheerful: A greater degree of contrast between the room and its furniture may be admitted in the chamber than in any other apartment. Stairways, halls and vestibules should be of a cool tone and simple in their style of coloring, being in that what they are in utility—a link between the exterior simplicity of a house and its interior richness and comfort.—*Manufacturer and Builder* (N. Y.).

SUBSCRIBERS changing their location and writing to us to send the MILLER to their new address, will confer a favor by stating what their former address was.

Oatmeal as Food.

BY D. G. F. MACDONALD.

There is no question that perfect health and a robust constitution are best secured and retained by plain diet, in which the nitrogenous, saccharine, amyloid and saline matters are in proper ratio.

I would urge upon the attention of the laboring classes oatmeal as a cheap and nutritious food. Ample testimony has been borne to its value as a wholesome article of food by the most eminent medical and scientific authorities. In short, its nutritious and sustaining qualities are now beyond a question. Practical experience has shown that it possesses in an eminent degree the ingredients essential to the composition of health—that it helps largely to develop the body, to make blood and tissue, muscle and bone, besides being easy of digestion. Oats, owing to their chemical nature, exceed all other cereals in nutritious properties, amounting to 77 per cent of heat-forming principle, with 91 of solid matter. Wheat has only 62 per cent of the former and 85 of the latter. A man of average weight requires about 22 oz. of dry food per day, distributed as follows in round numbers: 4½ oz. of albuminous substances, 3 oz. fat, 14 oz. carbohydrates—starch, gum, etc.—and 1 oz. of salts.

Liebig shows oatmeal to be nearly as nutritious as the best beef or mutton, and that it excels wheat-flour in forming bone and muscle. Surely, then, on such authority oatmeal should be more used by the English people. For the working classes it forms a meal of porridge or brose, with milk, butter-milk, treacle-beer, treacle or sugar, much more nourishing than the wheaten bread and fat so much used by them. In Scotland oatmeal porridge, with milk, is not only in great favor with the poor, but likewise with the well-to-do classes; and where is there a healthier, stronger and more stalwart people? The cynical lexicographer, Dr. Johnson, defined oats as "food for horses in England, and men in Scotland;" but he met with the just and terse retort, "And where will you find such horses as in England or men as in Scotland?"

Porridge made from wheatmeal is much dearer, though greatly inferior, to that made from oatmeal. Four ounces of oatmeal, costing about one halfpenny, makes a large plateful of thick porridge, superior to the Sheffield meat soup, costing about threepence a plateful. Physiologists and physicians tell us that the human body must have its various constituents presented to it in food. Oats contain all the nutriment and stimulant to be found in flesh food. Beef and mutton are supposed to be more nourishing, but this is not the case. Porridge and milk, vegetables and all farinaceous foods, will support life as well, if not better, at much less cost. For children oatmeal quickly develops their frames, forms their teeth and keeps them in vigorous health. As articles of diet, more might be done with barley-meal, bean and pea-meal, maize, haricot beans, rice, pearl barley and split peas, all of which are nutritious and cheap.

In Scotland the men breakfast and sup on porridge and milk, and dine at midday upon "brose" and milk, or herrings and potatoes, with oat or barley bread; and their fare scarcely varies from one end of the year to the other. Herrings and potatoes compose an almost perfect diet, supplying the "carbonized" food requisite to balance the farina in the potatoes. A Scotchman expressed the general opinion when he said, "I have lived 86 years on meal and milk, and I do not like anything else half so well."

There are many races of men whose food is as simple and unvaried—the South Sea Islander with his bread-fruit and cocoa-nuts, the Hindoo with his rice, the Arab with his milk and dates and the Neapolitan with his macaroni. These are plain dietaries; yet not more so than the primitive "milk and meal" of the stalwart Scotch peasant, who will bear comparison with any race for splendid physique and robust health.

I would recommend the numerous benevolent associations formed throughout the country to make greater use of oatmeal, as, in consequence of its cheapness, the funds at their disposal would be capable of greater benefit to a greater number.

THE adoption of the cental system in this country has been agitated for some time, and in the East has met with success. The Boston and New York Produce Exchanges have passed resolutions adopting it, and after Oct. 1st, all articles of produce in those markets will be bought and sold by the 100 lbs. or fraction thereof.

A Subscriber's Soliloquy.

To pay, or not to pay, that is the question
Whether 'tis better for me to refuse
To take a trade paper, and deprive
Myself from reading all the news,
Or pay up promptly what the printer asks
And, by such payment, cheer him? No payment no paper—
Then no more shall I be posted on the news
And trade haps throughout the world
And divers topics—'tis a consummation
That I long have feared. To pay, or stop?
To stop! perchance to lose—ay, there's the rub:
For in that stop no interest do I take
In any of th' affairs which move the trade,
And such a shuffling off of all that's good
Must make me pause. There's the respect
Which every editor maintains for those
Who come down with the cash and ne'er delay
To settle up "that little bill." For who would bear
The pointed squibs and pungent paragraph
Which far too oft reflect upon the man
Who fails to settle his subscription bill?
I'll haste me now unto the editor,
And, with my purse plerotic in my hand,
Will settle up in full, one year from date,
By paying to him from my ready cash
The sum which is his due in advance.

Foreign Commerce of the United States for 1878-79.

A compilation of statistics by the New York *Greaser* of Aug. 2nd, from the annual report of the United States Bureau of Statistics, fiscal year ending June 30, 1879, shows the balance of foreign trade to be decidedly in favor of this country. The information gleaned from the report is invaluable to students of the subject of inter-national commerce. The condensed report is as follows:

There has been a falling off in the exports during the month as compared with the same period last year of \$1,672,525, the figures being \$45,062,373 for last month, and \$46,734,898 for the month ending June 30, 1878. On the other hand, the imports for June were \$38,909,645, against \$35,506,288 for the same month in 1878—a gain of \$3,403,357. Since December, 1878, the imports have shown a steady gain over those for 1877-78, while there has been a continued falling off in the exports. The great preponderance of the exports during the first half of the last fiscal year, more than counterbalanced the falling off in the latter half, and so, as will be seen by the following figures, the balance of trade shows largely in our favor even over last year. The imports for the year ending June 30, 1879, were \$445,800,000, against \$437,000,000 last year—a gain of \$8,800,000. On the other hand, the exports for the year just past were \$710,400,000, against \$694,800,000—a gain of \$15,600,000. These figures show a balance of trade in our favor for last year of \$264,636,002, against \$257,800,000—a net increase of \$6,836,002. The following table gives a view of the relative value of imports and exports of merchandise during the last fifteen years:

Year ended	Exports.	Imports.	Excess of exports over imports.
June 30, Gold value.			
1865.....	\$166,029,303	\$28,745,580	72,716,277
1866.....	348,859,522	434,812,066	85,952,544
1867.....	324,506,111	355,761,096	101,254,955
1868.....	281,032,869	357,436,140	75,403,271
1869.....	280,117,097	417,506,379	131,388,682
1870.....	393,771,708	435,038,408	43,186,640
1871.....	442,820,178	620,229,074	77,403,506
1872.....	444,177,586	626,505,074	182,417,491
1873.....	522,479,322	642,136,210	119,656,288
1874.....	586,283,040	567,406,342	18,876,698
1875.....	513,443,711	533,005,430	19,562,725
1876.....	546,384,071	460,741,190	79,643,481
1877.....	602,475,220	451,323,126	151,152,094
1878.....	694,865,766	437,051,532	257,814,234
1879.....	710,428,743	445,792,141	264,636,602

It will be seen by the above table that we have changed the balance of trade from \$72,716,277 against us in 1865, and \$182,656,288 against us in 1871, to \$264,636,002 in our favor in 1879. Our exports show a steady increase since 1865; the figures running from \$166,029,303 in that year to \$710,428,742 in 1879—an increase of \$544,399,440 in the yearly exports. In connection with the above table, the following table of the exports and imports of bullion and gold and silver coin will prove interesting:

Year ended	Exports.	Imports.	Excess of exports over imports.
June 30.			
1865.....	\$67,643,226	\$9,810,072	\$57,833,154
1866.....	86,044,071	10,700,092	75,343,979
1867.....	60,868,372	22,070,475	38,797,897
1868.....	38,784,102	14,188,368	24,595,734
1869.....	57,138,390	19,807,870	37,330,504
1870.....	58,155,096	26,419,179	31,735,917
1871.....	98,441,988	21,270,024	77,171,964
1872.....	79,877,534	18,743,989	61,133,545
1873.....	84,608,574	21,480,037	63,128,537
1874.....	62,030,465	38,454,196	23,576,269
1875.....	92,132,142	20,900,717	71,231,425
1876.....	56,506,362	15,036,681	41,469,681
1877.....	56,102,237	40,774,414	15,327,823
1878.....	33,740,125	29,821,314	3,918,811
1879.....	24,090,611	20,263,000	3,827,611

The daily *Bulletin* adds the following: This comparison shows that, for the nine years preceding the panic, the net export of specie averaged \$58,500,000 per annum; while for the subsequent six years, the yearly net export has averaged \$29,000,000—the extremes being \$71,000,000 in 1874-5 and \$4,000,000 in 1877-8. Adding these factors to the merchandise movement, we have the following results for each of the two periods:

NINE YEARS PRECEDING THE PANIC.	
Excess of goods imported over goods exported.....	\$890,000,000
Deduct net export of specie.....	327,000,000
Commercial balance against U. S.....	\$563,000,000

SIX YEARS FOLLOWING THE PANIC.	
Excess of goods exported over goods imported.....	\$750,000,000
Add net exports of specie.....	174,000,000
Commercial balance credit of U. S.....	\$924,000,000

Of course there are sundry items which cannot be taken into consideration in these calculations, and the balances are consequently more or less approximated, but still they are sufficiently accurate to form a reliable basis for comparisons. From the balance of \$924,000,000, shown in our favor by the above table, some \$420,000,000 must be deducted in payment of interest due European holders of our bonds. This would leave us with a balance to our credit abroad of some \$500,000,000, which will wipe out the balance against us which accumulated during the first nine years of the period under review, and leave us a pretty good balance to boot.

EIGHT LITTLE PIGS.—While men were laying a pipe in the street near Mr. Grau Larabee's shop yesterday, they left the ditch open for a while, and a sow, with a family of eight while nosing around, got into it. The small pigs could not get out, and the mother tried her best to help them. She would get down in the ditch, grab a pig, but could not toss them high enough. Falling in this, she went to the pavement and tried to attract the attention of the passers-by by running up to them and squealing, and then going back to her imprisoned family, showing the way. Some boys finally helped them out, and the mother hog granted her applause and mouthed each youngster fondly as soon as it was safely out.—*Madison (Ind.) Courier.*

Grades of Wheat.

The grades of wheat in Chicago and Milwaukee for 1879, are established as follows:

MILWAUKEE.

SPRING WHEAT.—No. 1 Spring Wheat—Must be sound, well cleaned, weighing not less than fifty-eight pounds to the measured bushel.

Extra No. 1 Spring Wheat.—Shall be composed of plump, sound, well cleaned spring wheat, bright in color, and weighing not less than sixty pounds to the measured bushel.

No. 1 Hard Spring Wheat.—Shall be composed mostly of the hard varieties of spring wheat, which must be sound, well cleaned, and weigh not less than fifty-eight pounds to the measured bushel.

No. 2 Spring Wheat.—Must be sound and reasonably clean, and weigh not less than fifty-six pounds to the measured bushel.

No. 3 Spring Wheat.—Shall comprise all wheat fit for warehousing, weighing not less than fifty-four pounds to the measured bushel.

No. 4 Spring Wheat.—To be fit for warehousing, otherwise unfit for the higher grades, weighing not less than fifty-one pounds to the measured bushel.

Rejected.—Shall comprise all wheat fit for warehousing, but too low in weight, or otherwise unfit to pass as No. 4.

WINTER WHEAT.—No. 1 Winter—To be sound, well cleaned, reasonably plump, and composed of the white varieties.

No. 1 Red Winter.—To be sound well cleaned, reasonably plump, and composed of the red varieties.

No. 2 Red Winter.—To be sound, reasonably clean, and composed of the red varieties.

No. 1 Winter.—To be sound, well cleaned, reasonably plump, and composed of mixed white and red winter.

No. 2 Winter.—To be sound, reasonably clean, and composed of mixed white and red winter.

No. 2 White Winter.—To be sound, reasonably clean and composed of the white varieties.

No. 3 Winter.—Shall comprise all winter wheat fit for warehousing; weighing not less than fifty-four pounds to the measured bushel; not sound enough or otherwise unfit for No. 2 of the other grades.

Rejected Winter.—Fit for warehousing, but otherwise unfit for No. 3.

Mixed Winter and Spring Wheat.—In the case of a mixture of any considerable or material quantity of winter wheat with spring wheat, it shall be called mixed wheat, and graded according to the quality thereof, as provided for in the rule governing the inspection of spring wheat with reference to weight and condition.

Rice Wheat.—Will in no case be inspected higher than rejected.

CHICAGO.

SPRING WHEAT.—No. 1 Hard Spring Wheat—Shall be sound, plump and well cleaned.

No. 2 Hard Spring Wheat.—Shall be sound, reasonably clean, and of good milling quality.

No. 1 Spring Wheat.—Shall be sound, plump and well cleaned.

No. 2 Spring Wheat.—Shall be sound, reasonably clean, and of good milling quality.

No. 3 Spring Wheat.—Shall include all inferior, shrunken or dirty Spring Wheat, weighing not less than 53 pounds to the measured bushel.

Rejected Spring Wheat.—Shall include Spring Wheat damp, musty, grown, badly bleached, or for any other cause which renders it unfit for No. 3.

In case of mixture of Spring and Winter Wheat, it shall be called Mixed Wheat, and graded according to the quality thereof.

Black Sea and Flinty Pâte Wheat.—Shall in no case be inspected higher than No. 2, and Rice Wheat no higher than Rejected.

WINTER WHEAT.—The Board of Railroad and Warehouse Commissioners have adopted the following rules for grading winter wheat, for 1879, with the following proviso: "These rules shall be in force on and after July 29, 1879, but it is provided that all wheat in store on said date, inspected as winter wheat under the rules hereby amended, shall be inspected out in accordance with the provision of said rules as winter wheat."

No. 1 White Winter Wheat.—Shall be pure white winter wheat, sound, plump, and well cleaned.

No. 2 White Winter.—Shall be pure white winter wheat, sound and reasonably clean.

No. 1 Amber.—Shall be pure amber winter wheat, sound, plump and well cleaned.

No. 1 Long Red Winter Wheat.—Shall be pure red winter, of the long-berried varieties, sound, plump and well cleaned.

No. 2 Long Red Winter.—Shall be of the same varieties as No. 1, sound and reasonably clean.

No. 1 Red Winter.—Shall be pure red winter wheat of both light and dark colors, of the shorter-berried varieties, sound, plump and well cleaned.

No. 2 Red Winter.—Shall be of the same varieties as No. 1, sound and reasonably clean.

No. 2 Winter Wheat.—Shall include all northern-grown winter wheat and all mixtures of various descriptions of winter wheat, and shall be sound, reasonably clean and of good milling quality.

No. 3 Winter.—Shall include winter wheat not clean and plump enough for No. 2, and weighing not less than fifty-four pounds to the measured bushel.

Rejected Winter.—Shall include all winter wheat damp, musty or from any cause so badly damaged as to render it unfit for No. 3.

Death of Geo. C. Stevens.

Geo. C. Stevens died in Milwaukee, Aug. 14th, 1879, at the age of 49 years. He was, though only of middle age at the time of his decease, an old resident of Milwaukee, having come here in his youth. His father, the late Horatio Stevens, was one of the pioneers, and was engaged in the transportation business at an early day, owning one of the old Milwaukee piers, before the straight cut was opened, or the harbor otherwise improved. Here young Stevens learned thoroughly the business of transportation, and followed it, and that of advancing on shipments of grain till 1868. In 1870 he was appointed Collector of the Port of Milwaukee under Grant's administration. After retiring from that position he confined his business efforts to the old Empire Mills, which he owned, and run, in partnership with M. B. Medbury and H. S. Seamans, till his death. His home, during the later years of his life, was on a beautiful stock farm, a short distance from the city, where surrounded by all that nature and art could combine, he kept open house for his host of friends.

He was a member of the Milwaukee Chamber of Commerce, and the following action taken on the occasion of his demise shows the estimation in which he was held by that body.

The special committee named to prepare a testimonial to the character and personal worth of the late Geo. C. Stevens reported as follows:

The announcement of the death of Geo. C. Stevens, who, from boyhood, has been active and prominent in business and social affairs in this city, has cast a gloom upon the whole community. Educated in our midst, and one of the oldest of our members, we can recall the energy and activity with which in years past he conducted his large business transactions; we recall, also, the ability with which he discharged the duties of Collector of this port, and we follow him into his late life of comparative retirement from the busy hum of our chamber. In his quiet attention to the business of his mill, and in his more congenial occupation of rural pursuits, the last years of his life were entirely spent. As a writer or debater he was able to cope with the ablest in the field of discussion. In his social qualities he had scarcely an equal, and to those who enjoyed his society he will be an irreparable loss.

While thus testifying to the many good and manly qualities of the deceased, and lamenting his loss, we would tender our sympathy to his bereaved family, and, as a token of respect to his memory, send a delegation of our Board to attend his obsequies.

Resolved, That the Secretary be directed to send a copy of these proceedings to the family of the deceased.

SAMUEL M. OGDEN, DAVID FERGUSON, EWD. SANDERSON, WM. YOUNG, C. J. CARY, Committee.

On the adoption of this expression of the sense of the Chamber of Commerce, Acting President Brigham named Angus Smith, J. F. Hill, S. M. Ogden, O. J. Hale, Chas. Andrews, C. J. Cary, David Vance and Robert Elliot, as representatives of the Board at the funeral.

As an executive business man he was a model; in all the walks of private life irreproachable; and, as a friend, true as tempered steel. His virtues are feebly expressed in this imperfect record of a much nearer perfect life.

The Great Farm of the Northwest.

"Peace hath her victories no less than war," and what greater contrast to the ravages of war can be imagined than such wonderful farming as is carried on by Oliver Dalrymple in Northern Dakota. For four miles on both sides of the railroad and as far as the eye can reach, stretch the largest wheat fields under one management on this side of the Pacific coast, the point of commencement being sixteen miles west of Fargo. In this tract are included 14,000 acres under cultivation, comprising the Cass, Cheney and Alton farms, while away to the north, forty miles across the country, but reached by the Red River, is the Grandin farm, 6,000 acres under cultivation, and managed by Oliver Dalrymple precisely as are the others, making a grand total of 20,000 acres under one man's power. In 1875 Mr. Dalrymple induced Geo. W. Cass, President, and B. P. Cheney, one of the Directors of the Northern Pacific, with the Grandin brothers of Pennsylvania, to enter upon the scheme of a grand wheat farm, not only as a matter of profit, but as the best possible advertisement of the capabilities of this section of country, and two sections (1,280 acres) were broken in that year and cropped in 1876. From that time the progress of the enterprise has been sure and rapid, until to-day it stands as the most remarkable instance of successful

farming on a grand scale known on the continent.

Imagine yourself approaching the farms from the east; "o'er all those wide extended plains" stretches one sea of wheat as smooth as our great lake when the winds and waves are at peace. To the left rise the buildings of the Cass farm, beyond and on the same side of the track the Alton buildings, while on the right are those of the Cheney farm to which we ride rapidly for a nearer survey: 115 self-binding reapers, each cutting fifteen acres per day, are laying low the golden grain on the various farms, and one who has seen twenty of these in line, moving along with almost military precision, will never forget the sight. The whole work in fact has to be managed with the utmost minuteness of detail, for 400 men are now employed, while during threshing the number will be increased to between 500 and 600. At ten minutes to five breakfast commences, and at 6 o'clock the teams must be all ready and every man in his place; at 11 o'clock comes dinner, and at 3 o'clock lunch, and work finally ceases about eight. The men hired by the month receive \$20 and board, but during harvesting and threshing are paid \$3 per day and board, the time occupied in these two branches of work being about five weeks; 450,000 to 470,000 bushels is the estimated crop for this year, Mr. Dalrymple putting the average yield at from 23 to 25 bushels per acre, and as the present value of No. 1 wheat is \$1.25 in New York, we have left, after deducting 35 cents per bushel for freight, insurance, commission, etc., over \$400,000 as the value of this year's crop.

Facts and figures are dry reading, yet it may be interesting to most of our readers to know some further details of the management, expenses, etc., of this monster farm. Each 2,000 acres constitute a sub-division, with a superintendent for every 5,000 acres. On each sub-division is a complete set of buildings, including a house for superintendent, boarding house, buildings for sheltering machinery, etc. The different kinds of work are allotted to different squads of men, with a superintendent for each, and while harvesting is going on a repairer, on horse-back, follows each harvester, to make any needed repairs with the least possible delay. The cost of the first crop has averaged \$11 per acre, and of subsequent crops \$8, including interest on machinery, and the landed investment. This is about a dollar and a half less than it costs the average farmer. From a bushel and a quarter to a bushel and three-eighths of wheat is sown per acre, one span of horses or mules (of which there is about an equal number on the farm) sowing 80 acres, the plowing is done by the gang plow, and to the depth of fourteen inches. In plowing, seeding and harvesting (provided in the latter case the grain is equally ripe) a mile square is taken and finished up by itself. Each of the self-binding reapers saves the work of five or six men over the old style of reapers.

On reaching Dalrymple station, one naturally looks for an elevator or warehouse for the handling of this great crop, but in vain, for none is needed. The steam threshers, twenty in number, follow in a few days the harvesters, threshing the wheat from the shock, the grain is hauled at once to the cars standing on the sidetrack, and when twenty-four cars are filled they are started for Duluth without delay. Mr. Dalrymple's invariable custom for years, has been to sell his grain as soon as it could be got to market, and this year will be no exception in this respect.

The parties interested in this vast tract of land, 66,000 acres all told, of which less than a third is yet under cultivation, have paid on an average between four and five dollars per acre for their land, buying the railroad land with bonds when the latter were low, and the alternate sections of government land with Indian scrip. No other scrip is available, and no opportunity now exists for locating such immense farms. Mr. Dalrymple after carefully examining the land finally selected, made up his mind that the intrinsic value of it for farming purposes was not less than \$25 per acre, and he estimates the present value considerably in excess of that sum.

THE Eureka Manufacturing Company, of Rock Falls, Ill., manufacturers of the Becker wheat brush have met with wonderful success. Their sales this season are largely in increase of those for 1878. The Eureka brush gives unqualified satisfaction wherever used. All mill-owners who have not yet introduced the Eureka in their mills should lose no time in investigating the subject. Write them for their circulars and price lists.

NEWS.

EVERYBODY READS THIS.

ITEMS GATHERED FROM CORRESPONDENTS, TELEGRAMS AND EXCHANGES.

The following parties are engaged in building new flour mills: John Wallace, Modell, Ks.; A. J. Stroup, Elk Mills, Mo.; Wm. Adair, Parkinsville, Ind.; Joseph McGee, Perry, Ill.; Camanche Mill Co., Camanche, Iowa; J. W. Pickle, Medicine Creek, Neb.; J. A. Baker, Cedarville, Ka.; M. Watrous, Ft. Collins, Colo.; A. Bertelson & Son, Elsinore, Sevier Co., Colo.; Mr. Eitel, Chaska, Minn.; Skenworthy & Co., Rapidan, Minn.; Mr. Phippen, Dundas, Minn.; G. Cooper, Martinsville, Ill.; John Hoffer, Harrisburg, Pa.

The flouring mill of Porter & Mowbray, at Winona, Minn., was sold at auction August 9, the partnership having expired by limitation. The property was bid in by Mr. Porter at \$64,000.

The following is the list of parties who have bought the Becker wheel brush the past few days: E. P. Allis & Co., Milwaukee, Wis.; Bradford Mill Co., Cincinnati, Ohio; Nordyke & Marmon Co., Indianapolis, Ind.; Hoogland & Tresselt, Ft. Wayne, Ind.; Whitmore & Benyon, London, England; W. Gilbreath, Elkhart, Ind.; John T. Noye & Son, Buffalo, N. Y.; J. N. Smith & Bro., Brown's Mill, N. J.; Straub Mill Co., Cincinnati, Ohio; Sinker, Davis & Co., Indianapolis, Ind.; Thos. Bradford Co., Cincinnati, Ohio; M. S. Rexford, Fargo, Dakota; C. H. Guenther, San Antonio, Texas; H. A. Hayden & Co., Jackson, Mich.; A. Millot, Zurich, Switzerland; John P. Dale & Co., Louisville, Ky.

The grist, saw and planing mills of Letter & Appleton, at Black Creek, about twenty-two miles east of Green Bay with contents, and about one million feet of lumber, were totally destroyed by fire. Fears were entertained for the safety of the village, and, in response to a telegram for assistance one of the fire steamers from Green Bay was sent by special engine over the Green Bay & Minnesota road. However the fire was confined to the mill property. The loss is estimated at about \$20,000. No insurance. The mills had been shut down four days previous to the fire, and the origin of the latter is unknown. It is understood that the firm will rebuild immediately.

It is estimated that the crop of corn in Kansas for 1879 will be 125,000,000 bushels.

Baltimore is now the second largest grain shipping port on the Atlantic coast. The receipts during July were five million bushels, and exports nearly four million bushels.

The Quincy, Ill., coopers have struck for higher wages. The introduction of the use of sacks for flour instead of barrels has made a sad inroad in the coopers trade.

The flour mill at Sauk Centre, Wis., is exporting flour to Germany.

G. W. Van Dusen & Co. are building an elevator at Chatfield, Minn.

Mr. E. L. Baker, of Red Wing, Minn., while in Europe last winter, purchased six bushels of Hungarian winter wheat at a cost of \$7 per bushel. This wheat he hired Mr. Seth Lyons to put in on his farm, in Wisconsin, and the crop turns out first rate, standing up much better than other wheat. This variety of wheat is said to be the only hard winter wheat, and possesses properties peculiarly adapted to making a high grade of flour.

A grain elevator will be immediately built in Little Falls, Minn., by C. S. Barnes & Co., grain buyers.

A correspondent from Des Moines, Iowa, says: The oatmeal mill which started here a few weeks since already has a demand for its product exceeding its capacity, and will be doubled in size the present year. It has a permanent contract for four car-loads of meal per week from Glasgow, Scotland. Another mill will soon be in operation. Buyers are out contracting with farmers throughout Central Iowa for their entire crop at from 20 to 22 cents per bushel. Quite a contrast with a year ago, when oats were a drug in the market at from 12 to 16 cents per bushel, and no sale at that, when anything else could be got to ship.

The new Hubbard mill at Mankato, will start up Sept. 1st.

The citizens of Monument, Colo and Ada, Dakota, want some one to come and build a flour mill.

Yeo & Clark will soon erect a new mill at LaCrosse, Wis.

Messrs. Schloth & Gray will start up their new oat-meal mill at Dubuque Iowa, Sept 1st.

Donly and Harris' elevator at Columbus, O., burned Aug. 21st. Loss, \$25,000. Insurance, \$16,000.

S. C. Barton & Co. are about to build a new mill at Peterson, Minn. It will have a capacity of 200 barrels per day.

The iron trade in England is said to be improving, but the cotton trade is in a bad condition.

Wages at the Indianapolis Rolling Mills will be increased ten per cent, September 1st. This is one of the signs of the times.

The Illinois wheat crop for 1879 is estimated at 45,417,661 bushels.

Smith Bros., of Milwaukee, are rebuilding the mill at Saukville, Wis. It will have five run of stone.

Smith Bros., of Milwaukee, are rebuilding the mill at Scott, Sheboygan Co., Wis. It will have 3 run of stone.

Smith Bros. have just completed plans for a 10-run mill on the canal, Milwaukee.

Smith Bros., of Milwaukee, are making plans for a 6-run mill at Fox Lake, Wis.

Smith Bros. are putting in another run of stone, bolts, etc. for the mill in Peshtigo, Wis.

The Star Mills, of Milwaukee, (Nunne-macher Co.) after being shut down for some time has started up. Eighteen sets of rolls and much other machinery has been added.

Jonathan Mills is now busily engaged in putting in his new method of gradual reduction and machinery in the mill at Terre Haute, Ind.

More milling projects are talked off in Milwaukee by capitalists. Milwaukee is now one of the most important milling and grain centres in the world.

Mr. Brower, of the firm of Brower & Bennett, Fox Lake, Wis., will soon commence the erection of a flour mill at that place. Their mill at that place was burned some time ago.

J. B. A. Kern's Eagle Mills, of Milwaukee, have started up again. The new engine and other machinery work finely.

The electric light has been introduced at Niagara Falls. This magnificent waterfall presents an appearance of sublime grandeur when illuminated by this brilliant light.

J. G. Lawrence, of Wabasha, Minn., has shut down to make some extensive improvements. He will add several sets of rolls and other machinery. He has a 5-run mill.

The corn crop in Bulgaria is a failure.

Peoria's (Ill.) new corn-sugar factory is to be an immense affair, the dimensions of the building being 104x293 feet, and seven stories high. It will require 370,000 bricks in building, and is expected to consume 6,000 bushels of corn daily, employing 250 men.

The proprietors of the starch factory recently burned at Vincennes, Ind., are talking of rebuilding at Danville.

The corn crop in South Carolina is said to be a failure generally throughout the State.

Minnesota millers claim that the wheat crop of 1879 will make the best flour of any crop ever before harvested in that State.

Mr. Mowbray, formerly of the firm of Porter & Mowbray, is organizing a stock company for the purpose of building a large flouring mill at Winona, Minn.

Oshkosh is building an exposition building 400x40, for exhibitors at the Northern Wisconsin Fair.

S. C. Barton & Co., will build a new mill at Peterson, Fillmore county, Wis., on the site of Barton & Easton's mill, destroyed by fire in 1877. The new mill will have a manufacturing capacity of 200 barrels per day.

The severe storms of wind, rain and hail, about the middle of August, injured the corn crop in many sections of the country, but notwithstanding that the crop will be the largest ever harvested in the United States. Corn dodgers and mush and milk will be plenty throughout the land.

L. W. Smith, formerly of the firm of Smith Bros., has taken charge of a Jefferson county flour mill.

Walter Crawford's mill at Paris, Tenn., is being extensively overhauled by Nordyke & Marmon Co., of Indianapolis, Ind.

Miller & Harvard, of Howard, Neb., are fixing up their mill to the new process. Nordyke & Marmon Co., of Indianapolis, Ind., furnish the machinery.

The Corydon (Iowa) Elevator Co. have contracted with Nordyke & Marmon Co., of Indianapolis, Ind., for a large elevator.

Numerous car loads of machinery from the

works of Nordyke & Marmon Co., at Indianapolis, Ind., have been shipped to Davenport, Iowa, for the new 250 barrel roller or Hungarian mill which is being built for H. P. Beattie. A large force of millwrights follow to set the work in place.

D. C. Smith, of Waco, Texas, is commencing to put up a flour mill.

S. Tallman, of Brunswick, Minn., is building a flouring mill.

The large mill-furnishing establishment of Nordyke & Marmon Co., of Indianapolis, Ind., now employs 250 men, and owing to press of orders, runs from 6:30 a. m. to 10 p. m. (15 hours). Nothing but flouring mill machinery is made there.

A correspondent from Knoxville, Ill., states that the mill of Eiker & Warfel at that place, which was remodeled to the new process by Nordyke & Marmon Co., of Indianapolis, Ind., is now running night and day, and the results are beyond what was expected. Their flour commands the highest market price.

H. Kreisher & Son, of Frankfort, Ind., recently had their mill changed to the new process by Nordyke & Marmon Co., of Indianapolis, Ind. Their business now enables them to add two additional run of burrs to their mill which they have done recently, so that orders for their excellent flour can be promptly filled.

Colton Bros.' five-run new process mill, being furnished and set up by Nordyke & Marmon Co., of Indianapolis, Ind., is receiving the finishing touches, previous to starting up. The mill presents a fine appearance.

S. P. Heacock, of Chillicothe, Iowa; Parker & Bowdell, of Leighton, Iowa; Whitmore & Son, of Oskaloosa, Iowa and J. Bosley, of Walnut, Iowa, all have ordered of Nordyke & Marmon Co., of Indianapolis, Ind., the machinery for making new process flour.

A two-run water mill is being built at Lenora, Kas, by Charles Lathrop.

Nordyke & Marmon Co., of Indianapolis, Ind., have under contract the machinery for a two run water mill which will be put up at Hutchinson, Kas., by B. J. Potter.

Tibbott & Son, of Harlan, Iowa, have ordered of Nordyke & Marmon Co., of Indianapolis, Ind., the entire outfit for a two run water mill.

Peter Faber has contracted with Nordyke & Marmon Co., of Indianapolis, Ind., for an outfit for a three-run steam mill to be built at Wheatland, Minn.

Millers passing through Orrville, Ohio, may notice the handsome six-story brick building which is being built along the P., Ft. W. & C. R. R. Messrs. Williams & Griffith are preparing this building for 14 run of 48-inch burrs, bolts, purifiers and all the latest improved appliances of the process system of milling. The power will be a handsome 250 horse-power Corliss engine. All the machinery will be furnished and set up by Nordyke & Marmon Co., of Indianapolis, Ind.

J. A. White, of Shibley's Point, Mo., are remodeling their mill to the new process with machinery made by Nordyke & Marmon Co., of Indianapolis, Ind.

The new elevator in Milwaukee, being erected by Angus Smith, will probably be ready to receive grain by the middle of October. Its capacity will be 800,000 bushels of wheat.

Messrs. Henk & Co., of Chaska, Minn., are building a new 3-run mill. The building is already up, and Messrs. Wilford & Russel, of Minneapolis, Minn., are furnishing the machinery.

Messrs. Hulbert & Paige, of Painesville, Ohio, have just completed a flour mill for R. D. Hubbard, of Mankato, Minn., and are just commencing to build another at Appleton, Wis.

D. J. Tew, of Rushford, Minn., has purchased Mr. Valentine's interest in the Rushford City Mills.

The Mazeppa Mill Co., in addition to adding steam power to their mill, have been largely increasing the capacity by adding rolls, bolts, purifiers, etc. The work is being done by W. F. Gunn, of Minneapolis, Minn.

Beynon & Maes are operating the Diamond Mill at Owatonna, Minn. very successfully. It is a 5-run mill. Mr. Beynon is now traveling in Europe for the benefit of his health, and also to examine European methods of milling.

Mr. E. W. Pride is furnishing bolting cloths, etc., etc., for the repairs on the mills of Messrs. O. Klingholz Bros., Manitowoc, Wis.

Indiana estimates her wheat crop for 1879 at fifty million of bushels.

Messrs. A. Mill & Co., Centerville, Manitowoc Co., Wis., are adding new and important improvements to their mills, in the way of a new run of stone for middlings, bolting cloths, proof staff, etc., etc., the same being furnished by E. W. Pride, of Appleton, Wis.

Messrs. Trieman & Cooper, Manitowoc, Wis., are placing in their mills a set of chilled iron rolls, bolting cloths, etc., etc., the same being furnished by E. W. Pride, of Appleton, Wis.

E. W. Pride, of Appleton, Wis., has the contract for the furnishing of a 2-run mill to Ener Birum, Reed Wood Falls, Minnesota, the stones and machinery from the celebrated house of J. T. Noye & Sons.

E. W. Pride, Appleton, Wis., is furnishing Mr. Charles Richards, Oxford, Wis., 1 run, 36 inch portable mill, to complete his new 2-run custom mill.

W. H. Stacey & Co., Clintonville, Waupaca county, Wis., have their mills now in complete order for the new crop, having recently added new and important improvements. Rebuilding entirely their bolting chest, adding also new cloth and 1-run stones, Punfin's rollers, Becker brush, cockle separator, etc., making their mill first-class in all respects. The entire outfit for repairs was furnished from the celebrated mill-furnishing house of J. T. Noye & Sons, Buffalo, N. Y., through E. W. Pride, Appleton, Wis.

Capt. E. W. Pride, Appleton, Wis., is placing a pair of 12 x 20 rolls in the mills of Arthur Kellogg, Fort Howard, Wis., furnished from the house of J. T. Noye & Sons, Buffalo, N. Y.

Capt. E. W. Pride, representing J. T. Noye & Sons' at Appleton Wis., has the contract for a new 3-run mill for Ferdinand Rank, Brown Co., Wis. The work is now fully under way. J. S. Lampher, of Depere, Wis., is the superintending mill-wright.

Messrs. Nofftz & Ebling, Green Bay, Wis., are adding to their mills one of J. T. Noye & Sons' Model Middlings mills, new bolting cloths, and other important improvements, the same being furnished by E. W. Pride, of Appleton, Wis.

Capt. E. W. Pride, of Appleton, Wis., is furnishing Messrs. Rubnitz Cloves, Memasha, Wis., the machinery for their improvements, consisting of stones, bolting cloths, belting cups, etc., etc. These mills are being put in first-class order. T. S. Bennett, of Oshkosh, is the superintending mill-wright.

Messrs. Hanert & Co. are making new and important improvements in their mills at Appleton, Wis., adding a new purifier, manufactured by Huntly, Holcomb & Heine, Silver Creek, N. Y.; also new and important improvements in their manner of bolting. Their cloths, etc., were furnished by E. W. Pride, of Appleton Wis. Their mills are under the efficient charge of Mr. E. Whitmore, superintending miller.

E. W. Pride, of Appleton, Wis., is furnishing from the house of John T. Noye & Sons, to Thos. Smith, of Green Bay, Wis., one pair 12x24 chilled iron rolls, bolting cloths, etc., etc. The mills are under the efficient charge of G. B. Hess, as superintending miller.

E. W. Pride, of Appleton, Wis., is furnishing the machinery from the house of J. T. Noye & Sons, to B. Miller, of New London, Wis., who is rebuilding his mill entirely, adding new and additional stones driven upon the reel belt system, also bolts, rolls, purifiers, etc., etc. These mills will be new and entirely first-class, consisting of five-run of stones, arranged for custom and merchant work. O. W. Burns, of Appleton, Wis., is the superintending millwright.

Skinner & Adams new flouring mill at Kirwin, Phillips Co., Kan., was burned Aug. 23d. No insurance. Parties will probably rebuild at once.

A stock company is being organized at Cawker City, Kan., to erect a 300,000 bushel elevator.

The machinery is being placed in the mills now being built by M. T. Boulton, of Appleton, Wis.

Work is being rapidly pushed on the mills of Clark, Kimberly & Co., of Appleton, Wis.

The repairs on the mills of S. B. Nilty, of Appleton, Wis., is rapidly drawing to a close. These mills are first-class in all respects and are under the efficient charge of Mr. Thomas Reese as head miller.

The Winnebago Mills, Neenah, Wis., moved off on the 19th, under new and important improvements.

Edward P. Allis & Co. have closed a contract with the Minneapolis Elevator Company for a 24 x 48 Reynolds-Corliss engine and all the machinery for their large elevator now being built.

Angus, Smith & Co., of Milwaukee, have ordered a 26 x 48 Reynolds-Corliss engine and independent condensing apparatus of Edward P. Allis & Co., who are furnishing the machinery as well for the new one million bushel elevator.

The Reliance Works of Edward P. Allis & Co. are running night and day with a force of over 550 men, and can turn out work on very short notice.

Edward P. Allis & Co. have received orders for over one hundred Wegmann's patent porcelain roller mills in the past thirty days. Many of the finest mills, both East and West, are grinding all their middlings on these valuable machines.

Dillon & Carpenter, of Carpentersville, Ill., are remodeling their mill and putting in four porcelain roller mills. Edward P. Allis & Co. are doing the work.

Jere Ames & Sons, of Northfield, Minn., and E. T. Archibald, of Dundas, Minn., are putting in the Allis rolls.

Edward P. Allis & Co. have the large fine mills of E. V. White & Co., at Minneapolis, and White, Listman & Co., at LaCrosse, well on to completion, and are pushing vigorously the new Hungarian mill of E. T. Archibald at Dundas.

Edward P. Allis & Co. have just sent a beautiful Reynolds-Corliss engine to Louisville, Ky., to drive the machinery in the Exposition building.

The Milwaukee Milling Co. have ordered a 28 x 60 Reynolds-Corliss engine and condenser for their new mill, of Edward P. Allis & Co.

Valier & Spies, of Marine, Ill., are putting in Wegmann porcelain roller mills, bought of Edward P. Allis & Co., the sole manufacturers.

Stuart & Douglas have ordered a 20 x 48 Reynolds-Corliss engine, with condenser, of Edward P. Allis & Co., for their new oat-meal mill being built in Chicago.

James Campbell, of Litchfield, Minn., is putting in a 12 x 36 Reynolds-Corliss engine, built by Edward P. Allis & Co.

Ames & Hulbert, of Hutchinson, Minn., have ordered of Edward P. Allis & Co. a 12 x 30 Reynolds-Corliss engine.

J. N. Foster & Co., of Ripon, Wis., are putting in Wegmann porcelain rolls, ordered of Edw. P. Allis & Co.

Thos. Riddock, of Eureka, Wis., has ordered 3 Wegmann patent porcelain roller mills of Edw. P. Allis & Co.

H. P. Beattie, of Davenport, Iowa, has ordered 3 Wegmann patent porcelain roller mills of Edw. P. Allis & Co. This makes 7 of these machines in all that he has ordered, all to be used on patent flour.

La Grange Mills, at Red Wing, Minn., are putting in the Allis rolls.

Lincoln Bros., of Olivia, Minn., have ordered a four-run mill complete and Reynolds-Corliss engine of Edw. P. Allis & Co.

A. C. Godshall & Bro., of Lansdale, Pa., have given Edw. P. Allis & Co. an order for porcelain rolls.

The Phoenix and Reliance Mills, of Milwaukee, are putting in the Allis rolls.

Horace Davis & Co., of Golden Gate Mills, San Francisco, Cal., have ordered six roller machines, three porcelain and three iron, of Edw. P. Allis & Co., Milwaukee.

The Milwaukee Mills are putting in large numbers of the Wegmann Patent porcelain roller mills for grinding patent flour and cleaning bran.

A THREE-MILLIONTH OF AN INCH.—One of the most singular mechanical operations imaginable is the making of gold-wire for what is known as gold-lace. The refiner first prepares a solid rod of silver about an inch in thickness; he heats this rod, applies upon the surface a sheet of gold-leaf, burnishes this down—applies another coating, burnishes this down—and so on, until the gold is about one hundredth part of the thickness of the silver. The rod is then subjected to a train of processes which brings it down to the state of fine wire, when it is passed through holes in a steel plate, lessening step by step in diameter. The gold never deserts the silver, but adheres closely to it, and shares all its mutations. It is one-hundredth part the thickness of the silver at the beginning, and maintains the same ratio to the end. As to the thinness to which the gold-coated rod of silver can be brought,

the limit depends upon the delicacy of the human skill. It has been calculated, however, that the gold actually placed on the very finest silver wire for gold-lace is not more than one-third of one-millionth of an inch in thickness; that is not above one-tenth the thickness of ordinary gold-leaf.

Bi-Metalism in Germany.

Germany has been brought to a halt in the work of demonetizing silver. It must be remembered that all the old silver still in circulation remains a legal tender for its par value as before. This silver is substantially all in the form of thalers, which have never been presented, but are in general circulation at full value. In point of fact, therefore, Germany has reached the point where bi-metalism is as practically in operation as it is in the United States. The old silver thalers with which the German people have so long been familiar remain the legal tender and general currency of the people.

The Government is met by the astounding figures of the loss already sustained by the calling in of the smaller coins. The loss sustained already in the silver demonetized and sold, that is, sold for gold,—is somewhere about \$23,000,000, and this without any possible hope of compensation. There are now outstanding silver thaler pieces to the amount of 415,000,000 marks. This is about equal to 100,000,000 of our American silver dollars. The bullion value of these coins as compared with their coin value is 7 per cent less than our silver dollars. Considering that Germany has yet in circulation 100,000,000 of silver dollars of full legal tender, and that the Government has postponed indefinitely calling them in, there certainly can be no fear apprehended in this country from any excess of silver money. In addition to the \$100,000,000 of silver in thaler pieces, Germany has in circulation \$50,000,000 in subsidiary silver coin. The population of Germany is not greater than that of the United States, and yet Germany keeps \$150,000,000 of silver coin in circulation, and \$100,000,000 of that sum a full legal tender on a par with gold.

Germany has paid dearly for the demonetization of silver, and has given two official notices: (1) That the calling in of the thalers has been postponed indefinitely, and (2) that even the silver called in and melted down into bars will not be sold, at least during 1879. The demonetization has, therefore been brought to a close, and Germany has now practically in force the policy of bi-metalism, the proportion of silver in the form of thalers being equal to \$100,000,000 of our money. This action of the Government is, however, considered insufficient, and it is now strongly urged that there be an increase of silver coinage, and that the silver now held by the Government and heretofore offered for sale be re-coined and put into general use and circulation. This is but another step in the direction of bi-metalism. With \$150,000,000 of silver already coined and in general use, a withdrawal of all silver from sale, and a resumption of silver coinage, Germany shows how severely she has suffered from demonetization and how firmly she arrests its progress and inclines to the adoption of bi-metalism. The banks and bankers of Germany, as well of those of France, seem to differ widely from the gold ring in New York, and from Zach Chandler as to the advisability of the largest possible use of silver as money. They do not seem to be afraid of ruining the country by an increase of metallic money in the form of legal tender silver, and yet Germany has four times as much silver in general use as exists in this country. It does not seem to terrify the German banks or the German Government that silver exists in such enormous quantities there in the form of money, while the comparative pittance of 30,000,000 of silver dollars locked up in the Treasury at Washington is regarded in New York as some terrible menace to the country. —Chicago Tribune.

AMERICAN TRADE IN AUSTRALIA.—The following is a significant extract from a Melbourne merchant to his Birmingham correspondent: "We are very sorry to say that our American trade grows daily at the cost of our English department. Your English manufacturers must employ more labor-saving machinery, and not try to meet this American competition by reducing the wages of your workmen. We have noticed of late that in some cases the Americans, under the pressure of keen competition, are sending goods of inferior quality. Nothing will help the English more than this. It is quality alone that has put the Americans where they are in these markets—their quality keeps them there; if this falls off they will lose their hold at once."

The Patent Laws.

There seems to be a concerted attempt throughout the West to break down our present patent laws, or at least to so modify them as to leave them powerless as an inspiring motive to inventive thought.

The crusade against these laws is led on by a few aspiring politicians, numbering among them certain Congressmen, who hope to curry favor with the masses by their course. The destruction of our patent system is urged for the most ignoble purposes. The men who are the active participants in the crusade are those who hope to receive the benefits of the toils of the inventor without returning to him an adequate recompense. Our patent system is the growth of ages and the result of the best thought not only of this country, but of Europe. Chancellor Kent, as high a judicial authority as can be quoted upon this subject, says: "It has been found necessary for the promotion of the useful arts and the encouragement of learning, that ingenious men should be stimulated to the most active exertion of the powers of genius in the production of works useful to the country and instructive to mankind, by the hope of profit as well as by the love of fame, or a sense of duty. It is just that they should enjoy the pecuniary profits resulting from mental as well as bodily labor. We have accordingly, in imitation of English and foreign jurisprudence, secured by law to authors and inventors, for a limited time, the rights to the exclusive use and profit of their productions and discoveries." In pursuance of this pre-eminent doctrine the United States Courts have always liberally construed the rights of inventors under the patent laws. In the case of Turrel vs. Michigan Southern & Northern Indiana R. R., 1 Wall 491, and in numerous other cases of later date, they take the ground that patents for inventions are not to be treated as mere monopolies, and therefore odious, but are to receive a liberal construction, or, as held in Carr vs. Rice, 1 Fish, 198, patents are dealt with by Courts as a grant by the Legislature, in exchange for the free enjoyment of the patent discovery, after the inventor's exclusive privilege expires.

The country is greatly indebted to-day to its inventors. To our patent system, perhaps, more than any other have we been enabled to thus rapidly advance from a weak colony in 1776 to one of the most powerful nations of the earth at the present day. As England, by her system of trained labor, could successfully compete and outbid the continent in her many lines of manufactures, so by the aid of our mechanical inventions have we been enabled not only to compete with England, but are now fast becoming the master of almost every foreign market. No country has ever been so noted as this for its inventive skill. The number of our patents are more than double those of England, and are rapidly increasing. This is the result of that beneficent law which is now so vigorously attacked. If protection to inventive rights shall be withdrawn, the swift progress we are making will be checked. The inventor is inspired to labor for the reward. As the *American Manufacturer* justly says: "This is a terribly practical age, and the American people are the most practical portion of the human race. They pursue the business of invention as they do any other business, as a means of gaining a livelihood or making money. And that is the secret of the practical nature of their inventions. Take away the stimulus of protection in the property-right and ownership of their inventions, and all that kind of work would be laid aside at once. We would soon find as great a dearth of inventions and improvements as the most conservative could wish."

The men who are at work tearing down our patent system would not care to do without the steam engine, the cotton-gin, the telegraph, the loom, the sewing-machine, or the myriads of other inventions that have multiplied the hands of industry into a thousand fold power, but they would quietly recline upon their couch of ease until the inventor had expended a life of incessant toil, and brought them forth; then they would rob him of his property, and leave him, as has too often been the case even under our present laws, to die in poverty and want. We hope the day will not come when true inventive genius will fail to receive a due recognition and reward at the hands of the American people. There may be some modifications needed in our present system, but certainly the door should not be thrown open for a general and unrestrained piracy of the works of the inventive mind of the age.

Subscribe for the U. S. MILLER; \$1 per year.

Mr. Chas. Howard, of Neenah, Wis., is making some necessary repairs to his mills, making them first class in all respects.

Subscribe for the U. S. MILLER; \$1 per year.

The Weather as a Pain-Producer.

It is a familiar experience that certain bodily pains vary according to the weather. A series of observations on this subject, made with much ability and perseverance, has lately been reported to the American Academy of Science by Professor Mitchell. They are by Captain Catlin, of the United States Army, who lost a leg during the war, and since that time has suffered a good deal from traumatic neuralgia. He carefully noted, during five years, the effect produced on him by changes of the weather. For the first quarters of these five years there were 2,470 hours of pain, for the second quarters, 2,100 hours, for the third quarters, 2,056 hours, and for the last quarters, 2,221 hours.

The best "yield of pain" is in January, February and March, and the poorest in the third quarter—July, August and September. During these five years, while the sun was south of the equator there were 4,692 hours of pain, against 4,158 hours while it was north of the equator. The average duration of the attacks for the first quarters was 22 hours, and for the third quarters only 17.9 hours. Taking the four years ending January 1, 1879, it is found of the 537 storms charted by the Signal Bureau, 298 belong to the winter quarters, against 239 for the summer quarters. Hence we have the ratio of the number of storms of the winters and summer quarters corresponding to the ratio of the amount of neuralgia for these respective periods; and the ratio of the average duration of each attack for the same time corresponds closely with the ratio of the respective total amount of neuralgia for the same periods. The average distance of the storm-center at the beginning of the neuralgic attacks was 680 miles. Storms from the Pacific coast are felt further off very soon after or as they are crossing the Rocky Mountains, while storms along the Atlantic coast are associated with milder forms of neuralgia, which are not felt until the storm-center is nearer. Rain is not essential in production of neuralgia. The severest neuralgic attacks of the year were those accompanying the first snows of November and December. One other interesting observation is as follows: Every storm sweeping across the continent consists of a vast rain area, at the center of which is a moving space of greatest barometric depression. The rain usually precedes this storm-center by 550 to 600 miles, but before and around the rain lies a belt, which may be called the neuralgic margin of the storm, and which precedes the rain about 150 miles. This fact is very deceptive, because the sufferer may be on the far edge of the storm-basin of barometric depression, and seeing nothing of the rain, yet have pain due to the storm.

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We hope the milling friends of the UNITED STATES MILLER will be as liberal to it as it has been in the past, and will be toward them in the future. Subscription price, one year \$1.

We shall be pleased to have an early response to this. Fill out the blank below, enclose with money in an envelope, seal carefully and send at our risk. A receipt will be sent by return mail. Address all communications to the

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Editor of the UNITED STATES MILLER, Milwaukee, Wis.—Sir: Send one copy of the United States Miller for one year, for which find enclosed \$1.00.

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W. N. DURANT, City Mills, Milwaukee, Wis.
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Situations Wanted, etc.

Millers, Engineers, Mechanics, etc., wanting situations, or mill-owners or manufacturers wanting employees, can have their cards inserted under this head for 50 cents per insertion, cash with order.

WANTED—A situation as head miller. Am thoroughly competent. Address correspondence to EDWIN PRIEST, P. O. Box 618, auf Augusta, Ga.

WANTED—Two young Millers to work in a custom mill; must understand stone dressing and grinding; to work under a good Miller. Good references are required, and state what wages are expected. Address CHADE & SCHAUPP, Columbus, Nebraska. auf

SITUATION WANTED—By a practical miller in grist or grist and merchant work. Is a good stone-mill. If no satisfaction can be given no pay is asked. Can give good references. Please state salary and address. A. V. KEMERER, Waumandee, Buffalo Co., Wis. Respectfully, A. V. KEMERER. auf

WANTED—A situation by a miller of 18 years' experience, understands thoroughly both merchant and custom work—either old or new process; am industrious, honest and temperate; have a family. A place likely to be permanent preferred; do not like to be changing. Address, stating terms, C. C. ARNOLD, Jefferson, Jefferson Co., Wis. rep

TO MILLWRIGHTS—Wanted a situation at Millwrighting. I understand a part of it. Wages no object. I have three inventions, and am working at two more, all connected with the milling business. To the man that will take hold of me and give me work for one year I will give him an interest in my inventions. Address JOHN W. PETER, Belleville, St. Clair Co., Ill. In care of M. F. Seifert. sep2t

SITUATION WANTED—In either a merchant or custom mill; have had eight years experience in the business and guarantee satisfaction in all branches of the business; am a single man; willing to go anywhere. Good references given if desired. Parties answering this advertisement please state terms. All letters answered promptly. Address MILLER, Runch's Gap, Clinton county, Penn. auf

SITUATION WANTED—A practical miller of ten years' experience with winter wheat (best flour on new process) desires a place in a thorough new process mill in any capacity in which he can perfect himself in the art of high grinding (spring or winter wheat). Am 33 years old, industrious and temperate in all things; wages no object; unexceptional references given. Address, A. D. REAMER, June 11, Care of Reamer & Co., Chetona, Kansas.

TO MILL-OWNERS—Situation wanted by an experienced Miller to take charge of a mill or stone dressing in a new process mill. Have worked the new process since the beginning of manufacturing patent flour in this country, making from 20 to 68 per cent of patent flour. Reference furnished from the best of Milwaukee mill-owners if necessary. Any one in want of my services please address No. 221, Grand Avenue, third floor, Milwaukee, Wis. auf

SITUATION WANTED—In new process mill; have had valuable experience both in building new and remodeling old mills on the system of high grinding. I desire to make an engagement with parties about to build new mills or change old ones, and will guarantee satisfaction. Am a practical Miller, and can take the place of a millwright in every detail and have a number of improvements in connection with high grinding not generally in use. Have a good knowledge of all the latest millinery machinery, and believe I can make myself profitable to any mill owner on the new process. Wages an after consideration. Correspondence solicited. Address H. B. SHEARS, North Lake, Wis. auf

For Sale or Exchange.

Advertisements under this head \$2 per insertion, cash with order.

FOR SALE—One-half of 3-run, water power flouring mill, all in good order, and fully equipped with purifier, brush, smutter, separator, Parker scales and good office. Will sell easy on terms, and take part in good farm. I. W. DALLY, Woodbine, Iowa. jy*

FOR SALE—A small Steam Flouring Mill, 23 miles below St. Louis, on the Mississippi river and Iron Mountain Railroad. Everything in good running order. Will take part pay in country store goods. For particulars address C. W. FUNK, Sulphur Springs, Jefferson Co., Mo. jy*

PARTNER WANTED—I have a good Grain Elevator, large enough to run a flouring mill. Would like a partner who can furnish the necessary machinery. Parties having mills not paying will find it to their interest to correspond with me. T. B. GALLAGHER, Larned, Kansas. jy*

FOR RENT—I offer for rent my Grist and Saw Mill; 3 run of stone; House and Garden; Good Water Power; Water all year round; for term of years. For particulars call in person or by letter. M. HELD, Erfurt P. O., Jefferson Co., Wis. jy*

FOR SALE OR RENT—A two-run mill at one of the best points and wheat sections in Southern Illinois, with good railroad facilities for shipping to all markets. Mill new and in good running order, will sell or lease on reasonable terms. Address P. O. Box 204, Mt. Vernon, Illinois. sep1t

FOR SALE OR LEASE—For a term of years. The Cedar Street Flouring Mill, St. Louis, Mo. New, and in complete running order, having six runs of burrs and a capacity of three hundred and fifty barrels per day. Adjoining this property we have large vacant lots, which we will sell on very reasonable terms. Apply to MCCREY & TOWERS, 705 Pine St., Street, St. Louis, Mo. jy*

FOR SALE—I offer for sale a first-class modern flouring mill in this city, making 100 barrels a day; power-water and steam; have not stored a barrel this crop, selling as it arrives in New York; this is a fine opening for any one wanting a mill; property cost \$40,000, but will be sold cheap and on reasonable terms; reason for selling, belongs to an undivided estate. Address J. D. GREENE, Administrator, Fairbank, Minn. jy*

FOR SALE—Wishing to concentrate my business, I offer for sale one of my flour mills situated at Breckenridge, Sangamon County, Ill., 14 miles from Springfield, on the Ohio & Mississippi railroad, in a good milling country. This is a good two-run mill, nearly new with latest improvements and elevator attached for handling grain. Mill cost over \$10,000; will sell low and on good terms. For full particulars, address T. J. McWANE, Versailles, Brown County, Illinois. jy*

FOR SALE—At Chippewa Falls, Wis.—A great bargain. The flouring mill property formerly owned by H. S. Allen. The mill was destroyed by fire two years ago. This property consists of an excellent never-failing water-power, a good substantial dam, a very heavy stone foundation for a mill, two good turbine wheels, three village lots of land, etc. This property has just come into the possession of the undersigned by foreclosure, and they will sell it for the amount of the claim, which is much less than the value of the property, and will give a perfect title to the property. An investigation will satisfy any one that there is a bargain in this property. Address MATTHEWS BROS., FURNITURE CO., Milwaukee, Wis. rep

TO MILL PURCHASERS—Reason for Wishing to Dispose—Two Much Business.—For Sale, a desirable grist and saw mill together, both doing a good business. In good location for increasing business as well as sufficient power and population to make and dispose of 100 barrels of flour per diem, (i. e., with few additions and improvements). Situated in the pleasant Chenango Valley, and known as "Robinson's Mills," midway between the wealthy villages of Oxford and Greene, in Chenango county. Can be purchased with the above a comfortable dwelling house with each business, if required. Also a few acres of land. Water at all times three reaction wheels by Stratton. Two good, thick wheat or buckwheat and one run of feed stones; two good bolts, elevators, smutter, sheller, etc., and the circular saw apparatus, etc. Both mills, as well as the gear, are in good condition. The saw mill has earned \$1,200

a year. This a good offer for a reliable gentleman of means. Address, B. A. N., care UNITED STATES MILLER, Milwaukee, Wis.

FOR SALE—A bargain for someone with a little capital. Our steam grist mill with two runs of burrs, 42-inch, and the necessary cleaning machinery, with planing mill attached, will be sold to a good party for a song, or almost given to him. Situation good, at the crossing of the C. & N. W. R. R., and the C. & M. & St. Paul railway, in a rich farming country. Lands joining those of C. & W. Railway, about 1,500 feet from depot. Good run of custom. Reasons for selling, poor health and other business. Terms given on application to I. D. TITSWORTH & CO., Milton Junction, Rock Co., Wis. jy*

FOR SALE—The Flouring Mills at Troy, Kansas, known as the "Banner Mills," in successful operation, with well-established trade. Location unsurpassed. Railroads in every direction. Fine wheat and corn country. The best country in Kansas. Troy, the county seat, is a thriving town with good schools, etc. The mills have four runs of burrs, and the machinery throughout is all first-class. Undoubtedly the best constructed mill in the West. The best opening for business. On account of the ill health of the managing partner the property will be sold at a great bargain. Address J. T. TRACY & PARKER, Troy, Kansas. auf

GRIST MILL FOR SALE AT A SACRIFICE—Merchant and custom mill, situated in Belvidere, county seat of Boone county, Illinois. The mill has four runs of French burrs, and all the machinery is of best class; driven by a never-failing stream of water (Kishwaukee river). Mills of this class are seldom offered for sale, but the proprietor is very aged, and wishes to retire. Would sell for one-third cash down, balance on suitable terms, or would sell one-half of mill property. A person with means would do well to investigate immediately. For further particulars apply to the owner or address Box 544, Belvidere, Illinois. auf JAMES B. MARTYN.

FOR SALE—At La Grange, Mo., A four-run, brick, steam mill, situated on the Mississippi River, and on the St. Louis and Northwestern Railroad. This mill is 60 feet square and four stories high; it also has an L 60 feet long by 30 feet wide, three stories high, furnishing storage room for 10,000 bushels wheat and 5,000 barrels flour; well and substantially built; boilers, engines and machinery almost new; contains 4 runs of old stock French burrs and one pair for regrinding, with ample bolting capacity; 1 separator, 2 smutters, 1 brush scouring machine, 1 purifier, 3 pairs flour and wheat scales, and 1 six-ton wagon scales. This mill is situated in a splendid wheat region, and will be sold at a bargain. Address the LA GRANGE SAVINGS BANK.

FOR SALE—A one-half interest in a Grist Mill. Size, 25 x 35 feet; wing, 12 x 20. Mill is two and a half stories high. Two runs of burrs; size, 3 and 4 feet. Two new Lefel wheels. Fifteen feet head in a never failing stream. Ten acres of land, a house, barns and mill sheds. School and church near by. Is located on a main road, and within 2 miles of a city of 8,000 inhabitants. Mill is in good repair and doing a fine business. Object in selling is, I am blind and want a good steady man to take entire charge of the mill. Price \$2,700, with \$1,000 down. Possession given in 60 days from time of sale. Address with stamp, Box 1462, Battle Creek, Mich. sep1t

FOR SALE, AT PUBLIC AUCTION—Valuable property, houses, and lots and salt stores. I will offer at public auction on Saturday, October 11th, the Enterprise Steam Mill, situated in the village of Enterprise, half a mile from the river, and just out of the corporation of the city of Pomeroy. Coal in abundance; costs from 2 1/2 to 3 cents per bushel delivered at furnace door. Parties desiring to purchase are invited to correspond with the Subscriber at Enterprise Mills, near Pomeroy, Meigs county, Ohio. Terms of sale 10 per cent of purchase, money in hand; balance in ten equal yearly payments, with six per cent interest. August 12, 1878. J. M. SEIDER. sep1t

FOR SALE—A splendid chance for a man to locate in the "Land of Flowers." A 25-horse power saw mill, with blacksmith shop and wheelwright shop attached, 3 log carts and 3 yoke oxen, a homestead covering 160 acres of land, a dwelling house located on a river, ten miles from where it empties into Charlotte Harbor; plenty of water to lumber yard. This mill is situated in the thriving village of Fort Ogden, where all semi-tropical fruits are raised. Being down on the Gulf Coast we never have killing frost. Two churches and schools and good society are some of the inducements. I will sell one-half interest of the above so as to increase works. To any one wishing to come to Florida and wishing a business will do well to correspond with the undersigned. CHAS. B. PENDLETON, Fort Ogden, Manatee Co., Florida.

FOR SALE—A Texas flour mill and land; a rare bargain. I offer my steam flouring mill at Trinity Mills, a depot 16 miles from Dallas, Texas, and on the Dallas & Wichtita Railroad, for sale at a great sacrifice. The mill has three runs of stone, two for wheat and one for corn. It has a capacity of 100 barrels per 24 hours; fine tubular boiler and good but old style engine; stones driven by beveled gear; mill built four years ago and cost over \$9,000. With the mill I will sell 420 acres or more of land, on which near the mill are two dwellings of four rooms each and a large store-house; about 50 acres of superior prairie soil for field crops, fruit and vegetables; the balance is in timber and will afford perpetual fuel for the mill and fine pasture. It is located on the Elm Fork of Trinity River, and is exceedingly fertile. I will sell the whole to a CASH purchaser for \$15 per acre—not more than the value of the land. There is plenty of wheat raised in the county. Satisfactory reasons for selling. Address immediately. DR. ROY B. SCOTT, Trinity Mills, Texas. apt

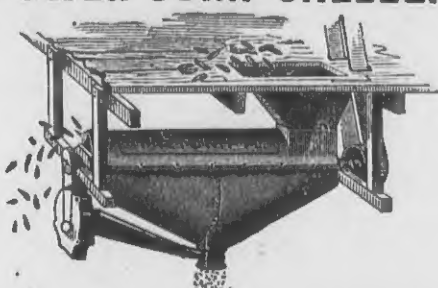
FOR SALE—IMPORTANT TO MILLERS AND CAPITALISTS—The firm of Porter & Mowbray having been dissolved by limitation, and being obliged by the terms of their articles of partnership to convert the property of the firm into cash, their Steam Flouring Mill and Elevator, situated and being on lots 1 and 2, block 163, and such part of lot 3 in said block 163, as the Elevator stands upon, being the easterly 30 feet or thereabouts of said lot, all running through to the river, in the city of Winona, Minnesota, will be offered for sale to the highest bidder, on Saturday, August 9th, 1878, at 10 o'clock in the forenoon.

The Mill has been in successful operation for the past five years, has a capacity of 450 barrels per day, and an established trade for its flour in the Eastern markets, where the reputation of its brands stand second to none. The Elevator has a storage capacity of 50,000 bushels. The building stands on the banks of the Mississippi, and there is in connection with them a well-built and commodious dock, extending into the river. A railroad track runs to the mill doors, affording every facility for receiving and shipping by both rail and river, having choice of routes, and an unlimited supply of wheat, having the country tributary to the Winona & St. Peter, and C. M. & St. Paul R. R.'s, and the river to draw from. An abundance of fuel at low cost can be had, and there is now on the ground, and will be sold at same time, sufficient for some months. There is a large home trade for offal, it being the only mill of any importance in the city. The mill is in good repair, and can be started as soon as the new crop is fit to grind. There will be sold at the same time, Horses, Harnesses, Wagons, Sleighs, a quantity of fuel, and other valuable property required in conducting the business.

To parties contemplating engaging in the milling business, this presents an opportunity seldom offered for securing a desirable property, and an established trade. Sale positive. For further particulars address au PORTER & MOWBRAY, Winona, Minn.

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I shall be pleased to receive your orders, as I always have a supply of New Picks on hand, and give particular attention to dressing Picks. feb

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Will insure to the user a perfectly true granulating face for Mill-stones and with the use of my BOSOM STAFF the object secured by the use of rollers can be perfectly attained, and as great a quantity of Middlings and clean Bran made as can be made by the Hungarian process, when used to perfection. With my PATENTED METHOD and BOSOM STAFF but very little stone dressing is needed after the stones are once put in order. One great trouble with millers now is that they dress their burrs too much. Stop cutting out and putting in patented dresses. Half land and half furrow; same at eye as at the skirt is what you want. It is the face and not the furrow that makes Middlings, and hundreds of Millers are to-day spending time and money and ruining their burrs by over dressing them. Secure a true face and the proper slant from the eye to the skirt and the results will be all that can be wished. The foundation of successful milling is in the grinding and if this is properly done no amount of subsequent treatment will turn out good flour. I earnestly invite your attention to my inventions, and solicit correspondence. My price for license to use my PATENTED METHOD with full printed directions, is Five Dollars per run, or, if I am requested to come personally, \$10 per run. Price for BOSOM STAFF \$35. Any quantity of references from leading mills furnished upon application. During September I shall be in the States of Wisconsin and Minnesota, and Mill-owners wishing to have me call upon them for the purpose of explaining my inventions, will address me early, as below. I guarantee satisfaction or ask no pay. Address,

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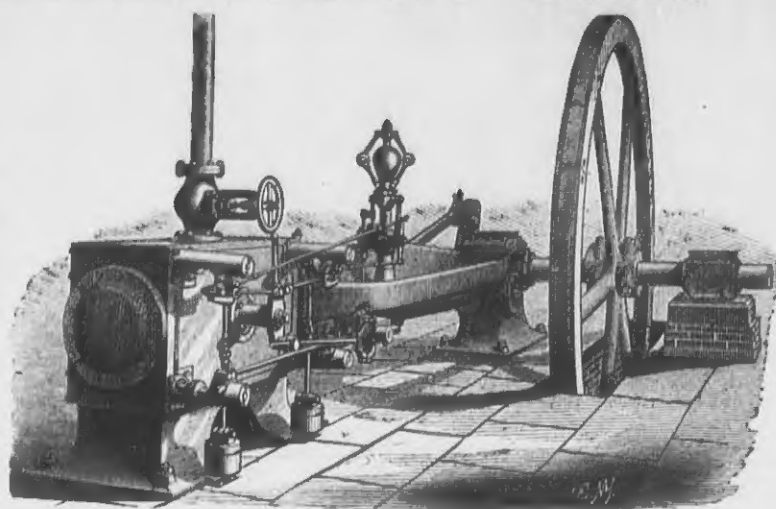
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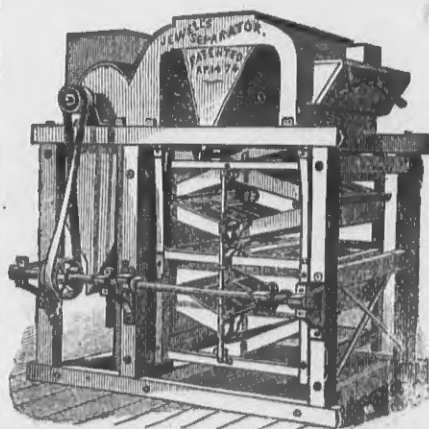
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BRISTOL, ENGLAND.

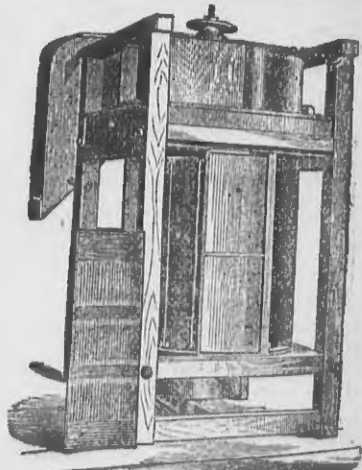
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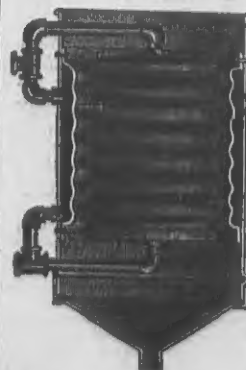
Belt.	Depth.	Width.	Price.
2 1/2	2 1/2	2 1/2	5 cents.
3	3	3	7 "
3 1/2	3 1/2	3 1/2	8 "
4	4	4	9 "
4 1/2	4 1/2	4 1/2	10 "
5	5	5	11 "
5 1/2	5 1/2	5 1/2	12 "
6	6	6	13 "
6 1/2	6 1/2	6 1/2	14 "
7	7	7	15 "
7 1/2	7 1/2	7 1/2	16 "
8	8	8	17 "

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